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REPORT

OF THE

DACCA UNIVERSITY COMMITTEE

1912.

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MEMBERS OF THE DACCA UNIVERSITY COMMITTEE.

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Dr. RASH BEHARY GHOSE, C.S.I., C.I.E., D.L., Vakil, High Court, Calcutta.

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Nawab SIRAJ-UL-ISLAM, Khan Bahadur, Vakil, High Court, Calcutta.

Babu ANANDA CHANDRA ROY, Pleader and Zemindar, Dacca.

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H. R. JAMES, Esq., M.A., Principal, Presidency College, Calcutta.

W. A. J. ARCHBOLD, Esq., M.A., LL.B., Principal, Dacca College.

Mahamahopadhaya SATIS CHANDRA ACHARJI, Vidyabhusana, M.A., PH.D., M.R.A.S., Principal, Sanskrit College, Calcutta.

Babu LALIT MOHAN CHATTARJI, M.A., Principal, Jagannath College, Dacca.

C. W. PEAKE, Esq., M.A., Professor, Presidency College, Calcutta.

Shams-ul-Ulama ABU NASR MUHAMMAD WAHEED, M.A., Superintendent, Dacca Madrasah.

D. S. FRASER, Esq., B.A., I.C.S., *Secretary.*

REPORT

OF THE

DACCA UNIVERSITY COMMITTEE.

CHAPTER I.

Development of University Systems in India.

In the well-known despatch from the Directors of the East India Company to the Governor-General of India in Council, dated the 9th July 1854, on the subject of the education of the people of India, the University of London, as it was then constituted, was presented as the type which ought to be copied in this country. The result was the establishment of the Indian Universities, bodies which examined, but did not teach, students of affiliated colleges and recognized schools. The University of London afterwards went so far as to examine any one, wherever educated, who chose to present himself; in this respect, however, the Indian Universities did not follow their model.

This type of University was not, it seems to us, either adopted or preserved, because it inspired any particular admiration or affection; but under the conditions then prevailing in India, it was regarded as the only possible scheme. Those who were at the head of the administration must have been well aware that it was not

entirely satisfactory, and many Indian gentlemen who had been to England shared the same views.

2. The idea of a University which controls and examines, but does not teach, seems sufficiently strange to those who have had experience of the great Universities of the West, but it was the loss of the manifold advantages connected with residence, of the training of character possible as the result of healthy and vigorous college life and discipline, which attracted most attention. In this respect the attitude of the past and the hope of the future are well expressed in the Report of the Education Commission of 1882 (pages 272-73) :—

".In their scheme of discipline, and in the academic life of their students, Indian colleges have but little analogy with those of the older of the English Universities, their resemblance being closer to those of Scotland and Germany. Residence in college buildings is not only not generally compulsory, but the colleges are few in which any systematic provision is made for control over the students' pursuits out of college hours. Boarding houses are, indeed, attached to certain institutions, and their number increases year by year. But, unless the student's home be at a distance from the collegiate city and he have no relatives to receive him, it is seldom that he will incur the expense which residence involves. Two principal reasons account for this feature in our system. First, the initial outlay upon buildings is one from which Government and independent bodies alike shrink. For so poor is the Indian student that it would be impossible to demand of him any but the most moderate rent—a rent perhaps barely sufficient to cover the cost of the annual repairs. The second obstacle lies in the religious and social prejudices which fence class from class. Not only does the Hindu refuse to eat with the Musalman, but from close contact with whole sections of his own co-religionists he is shut off by the imperious ordinances of caste. Experience, however, has already proved that the barriers of custom are giving way. In the North-Western Provinces and the Punjab, where the residential system has been widely tried, the success has been considerable; and nothing but want of funds stands in the way of a fuller development. In the more important Bombay colleges, also, a considerable number of the students are in residence; in Bengal and Madras the system has been less fully recognized. Yet it is the one thing which will give the Departmental officer a hold upon the lives of those whose intellects he trains with such sedulous elaboration. From any attempt to touch the religious side of the student's character, the Government Educational officer is debarred by the principle of religious neutrality. All the more important therefore is it that he should be able to exercise the moral influence of a close and watchful discipline."

Even at that date the resemblance between Indian Universities and those of Scotland and Germany was less close than the Commissioners supposed, as in both those countries the Universities were actively engaged in teaching, and therefore a much closer connection than in India existed between them and their students.

3. The movement in favour of residence, the idea that suitable hostels should be provided in connection with colleges, has steadily increased in strength. It has run parallel with a similar movement in the West, and has doubtless been much influenced thereby. Oxford and Cambridge have always been strictly residential, and as their numbers have increased they have added to their accommodation. In the Scottish Universities, the ancient strongholds of the non-residential system, there is a growing appreciation of the benefits of residence in common, whilst some, though not complete, provision for resident students forms a feature of the Universities newly established in the various large provincial cities of England. Even in the case of the medical schools the same change has been made, and now in almost all cases the great hospitals have hostels for the accommodation of their students.

The recent history of American Universities contains no more interesting chapter than that which describes the movement on the part of student and University administrator alike in favour of the more social life and more academic atmosphere that result from residence in well-regulated and comfortable hostels; and the writings and speeches of the great American educators abound in passages explaining the benefits and advocating the extension of the residential system.

In Germany the change has been less marked, but the following extract from Paulsen's work on German Universities indicates the trend of the best opinion :—

"I do not doubt that the German student will gradually get rid of his wari-"ness of dormitories and the house rules, without which they could not, of course, "exist. The advantages which they offer—peace and order, the security against being "fleeced, as well as against undesirable neighbours, the opportunity for social inter-"course and scientific co-operation—are so great and self-evident that it will not be "difficult to exchange a slight curtailment of personal freedom for a few such house "rules. Or rather, the students will learn to respect such regulations as a grateful "protection of their own peace and freedom."

4. It is hardly an exaggeration to say that the spread of the hostel system and the increased appreciation of the English collegiate scheme of residence constitute the most important outcome of the efforts made during the past twelve years for the improvement of higher education in India. The report of the Universities Commission of 1902, the Universities Act of 1904, successive reports of the Imperial and Local Governments, and many other documents relating to college administration indicate a frank adoption of the residential ideal, and an ever-increasing anxiety to give it a wider and more systematic application. Moreover, the reforms thus introduced by the Government and the Universities have received the heartiest support alike from parents and pupils, and in all colleges where the hostels are well managed the greatest competition takes place to secure the advantages of residence therein.

5. Whilst the desirability of a good residential system may be said to be fully appreciated, the idea of a teaching University is more remote from the modern

Indian system. In the West practically all Universities are occupied with teaching and London, though it still examines outside candidates, is now become a vast teaching organization of great potentialities. The newer, like the old, Universities were established solely with that end in view, and at Oxford and Cambridge a vigorous college life flourishes side by side with a general system of inter-collegiate lectures, and with a central University staff the strength of which has been greatly augmented in recent years.

The widely scattered colleges which have hitherto been the only avenue to higher education in India, and which will remain a powerful element in the educational system, require federal Universities for their control and for the examination of their students. While the need for this type of University is therefore undoubted, the conception of another type, directly responsible for the conduct of its own teaching, is becoming more clearly realized. The Indian Universities Act of 1904 authorized the Universities to appoint professors and to assume the rôle of teachers, and Calcutta is endeavouring to carry out this obligation by taking a direct part in post-graduate teaching in the University town. The Aligarh and Benares schemes are further signs of this great development of public opinion.

6. There are thus abundant indications that the Government and the people have alike come to realize that a University, if it is to satisfy in full measure the requirements of the educated classes of India, must denote more than mere examination, must undertake more than mere control, must offer more than mere instruction. It must be an institution in which a true education can be obtained—the training of the mind, body and character; the result "not a book, but a man."

CHAPTER II.

Appointment and Proceedings of the Dacca University Committee.

THE brief historical review contained in the last Chapter leads to the conclusion that the multiplication of scattered colleges, bound together by the loose tie of affiliation to a common University, can no longer be recognized as the sole means of satisfying the needs of the ever-increasing number of students seeking higher education; a demand has arisen for the fuller life and organized co-operation of the residential and teaching University.

2. The Government of India in their letter (No. 811, dated the 4th April 1912) announcing the decision to establish a University at Dacca, afforded a clear indication of their desire to satisfy these new aspirations, and the Resolution of the Government of Bengal (No. 567, dated the 27th of May 1912) appointing us to frame a scheme for the new University, lays equal emphasis on this aspect of the question. We were instructed that the University of Dacca should be of the teaching and residential and not of the federal type, and that it should be a self-contained organism unconnected with any colleges outside the limits of the city. We have carefully followed these instructions.

3. We met at Calcutta on the 20th June, and there held sixteen meetings to discuss questions of general principle. The further examination of these questions and the elaboration of detail, we referred to as many as twenty-four sub-committees. This arrangement afforded us a valuable opportunity, by the co-option of a number of persons with special qualifications, to secure expert and authoritative advice upon many phases of University affairs. The requests for assistance which we made, under the authority conferred on us by the Government of Bengal, met with a most ready and cordial response. The scheme presented in this report is very largely the work of the co-opted members of the sub-committees, and our most cordial thanks and acknowledgments are due to our many able and distinguished coadjutors. The substance of the reports of the various sub-committees is incorporated in our own report and its appendices, and it has not therefore been necessary to reproduce them. We have in almost all cases adopted the advice tendered by the sub-committees, and wherever we have had occasion to differ from them on a cardinal point we have made

mention of the fact. A list of the sub-committees, with the names of their members, is given in Appendix XI. Their proceedings were discussed in our second session (September 9th to 11th), and we met finally to consider our report at the end of November.

We have also consulted experts on architectural, engineering, sanitary and many other problems which are involved in the creation of a residential and teaching University. To them also we are indebted in the very highest degree, and we take this opportunity to express our full recognition of their services. A list of these advisers is given in Appendix XII.

We very gladly took advantage of the kindness of the Hon'ble Justice Sir Ashutosh Mukharji, KT., C.S.I., M.A., D.L., Vice-Chancellor of the Calcutta University, in consenting to give us the benefit of his advice, and we are grateful to him for wise counsel on several difficult questions.

4. Our instructions require us to submit a complete scheme, to be accompanied by a financial estimate sufficiently detailed to enable the proposals to be laid before the Secretary of State. We have endeavoured as far as possible to comply with these directions, but we have not attempted to prepare detailed plans of buildings or detailed estimates of all capital expenditure, as this elaboration would have occasioned protracted delay in the presentation of our report.

CHAPTER III.

Departments of the University.

We propose that the Dacca University shall include the following Departments :—

Arts.	Law.	Medicine.
Science.	Engineering.	Teaching.
Islamic Studies.		

Details regarding these seven branches of the University will be given in the proper place : in this chapter we wish to make a few preliminary remarks with regard to them.

2. The Department of Arts will include the subjects ordinarily studied in an Indian University, instruction being given in the lower branches by the colleges and in the higher by the University. The new University will meet the needs of a population much less diversified than that served by Calcutta, and the number of languages taught will be much smaller. Science will form a separate department immediately under the University, and its common laboratories will be used not only by students in the Departments of Science and Arts, but also by students of Engineering and Medicine : they must therefore be constructed on an extensive scale, and they should afford opportunity for instruction of a high order and for research. This concentration of laboratory teaching will be found to be both economical and convenient ; and, by bringing together a number of able students engaged on advanced work, a stimulus will be given which could hardly otherwise be created.

The Department of Islamic Studies will be a distinctive feature of the Dacca University. The question of such a department was raised in the letter from the Government of India, and we referred it to a distinguished and representative committee, who devoted great labour and pains to its consideration. They framed a scheme for a comprehensive and advanced course of Islamic studies, based on a reformed madrasah curriculum and combined with a thorough course of English. We endorse the opinion of the committee that a student thus trained will have the opportunity of becoming a ripe scholar and a man of culture, who should make a good Government officer or a suitable recruit for a learned profession. We also believe that this new departure will be greatly appreciated by the Muhammadan community in Bengal.

The subject of legal studies gave rise to protracted discussion, which finally resulted in the recommendation (to be explained more fully later on) that Dacca

students should read for the law degrees of Calcutta, their instruction being given and controlled by the Dacca University. The Government of Bengal addressed us specially regarding the training of engineers. They explained the general trend of proposals which have been made for the advancement of technological and industrial education in the Presidency, and requested that, if we were of opinion that a residential Civil Engineering College could appropriately be established as a portion of the new University, we would prepare a detailed scheme and include it in our report. The question is largely one for expert opinion, and we were fortunate in securing the co-operation of a committee including members well qualified to advise upon it. We agree with their conclusion that the conditions which will prevail in the proposed University will be exceptionally favourable to a Civil Engineering College, and we consider that the scheme which they have framed will afford excellent opportunities to students of Bengal to qualify themselves for the higher branches of the engineering profession. Competition for admission into the Calcutta Medical College has become so great that further provision for medical students must be made in the province. On consulting the medical authorities we found that it would not at present be practicable to establish a fully equipped medical college at Dacca, but that it might be possible to take advantage of the science teaching to be offered in the new University, in order to give instruction up to the standard of the first M.B. With the approval of the Government of Bengal, a committee, including experienced medical officers and practitioners, was formed to consider the question. They found that the proposal could be carried out without serious difficulty, and they prepared a scheme which will relieve the pressure on Calcutta and will also afford valuable facilities to students of Eastern Bengal who wish to follow the career of medicine. A Training College for teachers in English schools, established at Dacca in the year 1910, should be incorporated in the new University. A committee, including experts from both Calcutta and Dacca, has reviewed the system obtaining in this college in the light of the experience of the last two years. They have drawn up a revised scheme and suggested a syllabus, which will in our opinion greatly improve the training of teachers in Eastern Bengal.

3. We debated the question whether a College of Agriculture should form a part of the new University. It appears to us that there is no scope at Dacca for an institution of University grade, but that it might be desirable to found an agricultural school in connection with the Government experimental farm, which is situated a few miles to the north of the civil station.

CHAPTER IV.

Colleges and Students.

THERE are at present two Arts Colleges in the town of Dacca—the Dacca College with about 840, and the Jagannath College with about 530, students. There is also a Law College providing instruction for about 100 students, and a Teachers' College with accommodation for the training of 55 teachers. All these institutions are at present affiliated to the Calcutta University. They will form a useful nucleus, but will not alone provide the material which is necessary for the development of a teaching and residential University. To create the true ideal, the sense of citizenship of no mean city, the mingling of habits, tradition, reverence and friendship which form the real University atmosphere, more numerous and diversified elements must be brought into play. The scheme which we desire to submit includes the following :—

	Number of students.
1. Dacca College	600
2. Jagannath College	500
3. A New Arts College	500
4. A Muhammadan College	500
5. A Women's College	40
6. A College for the well-to-do Classes	120
7. An Engineering College	60
8. A Teachers' College	80
9. A Law Department	180
0. A Department of Medical Studies	160
1. Post-graduate students of Arts and Science ...	150
	2,890

2. The Dacca College, a large and flourishing institution which deservedly enjoys a high reputation, was founded in 1841, and was transferred to its present

buildings in 1908. These buildings lie within the precincts of the new University, and with some alterations will continue to be the home of the College. A considerable reduction in numbers is proposed: many of the Muhammadan students (numbering about 170) will join the Muhammadan College, and, apart from this, we are of opinion that the best features of college life are to be obtained in institutions which are not of too large a size. The Jagannath College was established in 1884, and was raised, with the aid of a Government subsidy, to the first grade in 1908. It is a flourishing and popular institution, and its numbers have increased largely in recent years. It is located in buildings situated about two miles from the University site. This is too great a distance to allow of its participation in a scheme the essence of which lies in compactness, and the removal of the College to new premises within the University forms an integral portion of our proposals. The buildings at present occupied by the College should revert to the use of the Jubilee High School, which was formerly attached to the College and occupied a portion of the same premises. A special feature of the College will be, as at present, the facilities which it affords to poor students: fees will be low and provision will be made for a larger proportion of non-resident students than in the Dacca and New Colleges. The New College will be a large residential institution of the same type as the Dacca College. The progress of Muhammadan education, which should be an important aim of the new University, will be greatly promoted by a Muhammadan College, which—we have been assured and are convinced—will be extremely popular. The need for a separate hall for the residence of Muhammadan students has been recognized for some years past, and proposals to this end, framed by the late Government of Eastern Bengal and Assam, have received the general sanction of the Government of India. In a teaching and residential University this scheme develops naturally into a separate College, in which students will enjoy the advantages of a corporate life in an environment specially adapted to Muhammadan needs and tastes and, at the same time, will mix freely with the main body of undergraduates both in study and in recreation. All Muhammadan students in residence will join the Muhammadan College, unless it is found desirable at some future time to attach a hostel for Muhammadans to some other college; but it should be open to a Muhammadan student who lives with his parents or guardians to enter any college on the same terms as other non-resident students. The students of the Muhammadan College will belong to two distinct classes—those following the general courses and those reading in the Department of Islamic Studies. We estimate the numbers at 300 and 200 respectively. The figure 300 may seem somewhat large as compared with the present total of about 200; but the number of Muhammadan students at Dacca has increased in so remarkable a manner during the past four years that the provision which it is proposed to make is by no means excessive: indeed, we hope that it will be exceeded early in the career of the University. The site which is to be allotted to the Muhammadan College will allow fully for expansion, and as soon as it becomes necessary further accommodation

should be provided. It is difficult to estimate the number of students who will be attracted to the Islamic Department of the University. A new system has to be organized and become known, and several years must elapse before it will be in full working order. It is therefore likely that for some time after the inception of the University the number of students will be considerably less than 200, although eventually it may greatly exceed this total.

3. The number of graduates reading for the Master's degree and prosecuting original research will not attain its normal level for several years after the University has come into being. For present purposes, we may estimate for about 150 graduate students. They will remain members of the colleges from which they take their degrees, and the total will therefore be distributed among the colleges, approximately in proportion to the number of undergraduates in each.

4. In addition to the three general colleges and the College for Muhammadans we consider that provision should be made for a college for women and a college for the use of the well-to-do classes. Female education in Bengal is developing in so promising a manner that women students may fairly claim to share in the benefits of the new residential University. The failure of colleges to attract students of the well-to-do classes is a very serious and far-reaching defect of our educational system, which we hope the new University may help to remove by the incorporation of a college specially designed to meet the requirements of such students. These special colleges will be discussed in detail in later chapters of our report. For the moment it will suffice to say that we make provision for 40 women students and for 120 students (100 Hindus and 20 Muhammadans) in the college for the well-to-do classes.

5. There remain the students of the professional departments of the University. Students of engineering will be accommodated within the University in a separate college, provided with appropriate workshops and laboratories. Medical students will be undergraduates studying the scientific portion of their course, and they will be distributed between the various colleges. Students will study law, after graduation, in a special department of the University, and will continue to be members of the colleges from which they graduate. The Teachers' College, which will admit both graduates and students who have passed the intermediate examination, must remain outside the University area, since it is necessary to accommodate it in the portion of the town in which the high schools are situated.

6. Having regard to the rapid increase in the number of University students in Bengal, and to the difficulty experienced by existing colleges in finding accommodation for the numerous applicants for admission, there need be no apprehension lest the figures given in paragraph 1 prove to over-estimate the future demand for University education. On the contrary, we believe that before many years have passed accommodation will be needed for a larger and ever-growing number. This

increased demand should be met only to a very limited extent by the expansion of the original colleges of the University, since the system of life and instruction which we propose would be seriously injured if colleges were allowed to grow to an unwieldy size. Expansion must in the main be provided for by an increase in the number of colleges. Suitable sites are available, and the new colleges, the type of which will be determined by experience, will add to the variety and to the efficiency of the University.

7. While it has been natural, and even necessary, in this and the preceding chapters to dwell on those features of the new University which transcend the scope of the existing colleges in which some approximation has been made to the residential type, the Committee recognize to the full that the complete University life, which they desire to make possible, must be based on the vigorous individual life of the colleges. Accordingly at the very beginning of our deliberations we definitely adopted as our fundamental principle that the college is the unit of University life and made this part of the definition of a residential University. We anticipate that each college of the Dacca University, whether it is one now in active working, or yet to be founded as part of this scheme, will have its special characteristics and develop in its own way. The individuality and variety of the colleges is as much a part of the scheme as the completeness and community of the new University life. There will be, in a way never before known in India, a healthy interaction of the colleges upon each other and a heightening of the separate and limited life of each by participation in the larger and fuller life of the University. At the same time, while the University is to be distinct from and greater than the colleges, it is to be made up of them; and the health and vigour of the whole will depend on the health and vigour of the parts. It is in the individual college also that the most intimate part of the collegiate life will be lived; in the college the corporate spirit must first develop so that loyalty to the college may expand into loyalty to the University. The college is, as heretofore, to be an organic whole, and, within its limits, complete; the new departure is this, that the college instead of being mechanically joined with other affiliated institutions to a University centre, which is organized without any closer relation to them than this affiliation, is now to be organically bound with other colleges into a higher and more complex unit, the teaching and residential University.

CHAPTER V.

Arts and Science: Entrance Qualifications.

THE Dacca University should be open to students from the Bengal Presidency and the Province of Assam. As it will be situated in the heart of Eastern Bengal, the majority of its students will naturally be derived from that part of the country; but, in order that it may fulfil its mission as a pioneer teaching and residential University, it should accept freely and without preference students from all parts of the two provinces. Students from other provinces should be admitted only after special consideration and by the special order of the University.

2. With the comparatively rare exception of private students, candidates for admission to the University will come from the recognized schools of Bengal and Assam, and the entrance test must therefore be based on the course followed in those schools. That course leads up to the matriculation examination of the Calcutta University, which is held at numerous centres selected to meet the convenience of local schools. Since all colleges outside the town of Dacca will remain affiliated to the Calcutta University, and since many students from Eastern Bengal schools read in the colleges of Calcutta, the requirements of the Calcutta University must continue to regulate the course of study in the high schools of the eastern as well as of the western divisions, and the University of Dacca could not with advantage set up a different standard or prescribe a new course. In these circumstances it would not be desirable, while it would be extremely difficult and inconvenient, for the Dacca University to establish local centres side by side with those of Calcutta for the purpose of holding a separate examination. We therefore consider that the Calcutta matriculation certificate, which must continue to be regarded as the general school-leaving certificate, should render a student eligible for admission to the Dacca as well as to the Calcutta University.

3. We have carefully considered the question whether, without entering the general field in rivalry with Calcutta, a separate entrance examination for the new University might be held at its head-quarters. A suggestion was put forward, and is favoured by some members of the Committee, that a special examination for the award of junior scholarships tenable in the Dacca University should be held annually at Dacca for students from any part of the Bengal Presidency and Assam, and that candidates who give evidence of adequate attainments should, even though they fail

to obtain scholarships, be eligible for admission either to the Dacca or to the Calcutta University. The Calcutta examination would also be held at Dacca as at present, and a candidate would be allowed to present himself for whichever examination he pleased, the Dacca examination being held earlier in the year in order that students who do not pass it should have an opportunity of obtaining the Calcutta certificate. The majority of us think—and Sir Ashutosh Mukharji concurs in this view—that this arrangement would be cumbrous and difficult to carry out, and that it would be likely to cause confusion rather than to confer advantage. Consequently, although we should have been glad if we could have recommended a practical scheme whereby the Dacca University might take over part of the work of examination, we consider that, for the present at any rate, the matriculation certificate of Calcutta must remain the sole general entrance qualification for the two Universities. We do not, however, desire that this decision should be regarded as final; the matter might well be reconsidered after experience has been gained of the working of the new University. We also recommend that the inspection and recognition of schools in the town of Dacca, which will stand in a specially close relationship to the Dacca University, should lie with that University instead of with the University of Calcutta.

In view of our general conclusions it is not necessary for us to consider further the conditions to be fulfilled by candidates for matriculation, since these will be governed by Chapter XXX of the Regulations of the Calcutta University.

4. Whilst a certificate that he has passed the Calcutta matriculation examination will render a student eligible for entrance into the Dacca University, he will not become a member of the University until he has obtained admission to one or other of its colleges and has paid his entrance fees. Admission should be regulated by the college authorities, who should be responsible for selecting their freshmen from among the eligible candidates who present themselves. Those selected will be formally matriculated as members of the University by some appropriate ceremony.

CHAPTER VI.

Arts and Science: General Courses of Study.

THE Dacca University should adopt the length and divisions of the Calcutta course in arts and science, which are well suited to students who begin their University career at the stage of development reached by a boy who has passed through a Bengal high school. Uniformity in this respect will also be convenient in the case of two Universities whose students, drawn from the same area, may sometimes be compelled to transfer from one University to the other. There should therefore be a four years' course for the degree of Bachelor, divided into two periods (which may conveniently be styled junior and senior) each of two years' duration, and a further post-graduate course of two years leading to the degree of Master. Indian students enter the University at a very early age; they study in a foreign language; and their initial attainments are often poor. The first two years of University study should therefore be designed to carry general education to a point which will enable the student to embark on a course of higher University training. Thence onwards specialization may be allowed, and should be carried during the final two years to a stage which will enable the student to obtain a deep knowledge of some branch of his subject, and even to undertake original work.

As in other Indian Universities, separate degrees should be given in arts and science, the latter being conferred on candidates who devote themselves to the study of science throughout their University career.

2. We recommend that the following subjects should be included in the general course :—

English.	Persian.	Physics.
Bengali.	History.	Chemistry.
Urdu.	Economics.	Botany.
Sanskrit.	Philosophy.	Zoology.
Arabic.	Mathematics.	Physiology.

This list requires few comments. We do not suggest a great choice of languages. Bengali and Urdu are the only vernacular languages for which provision need at first be made. Natives of the Assam Valley are not likely to come to Dacca except on rare occasions, and we have not thought it necessary to include Assamese in the curriculum. We have considered representations that Pali should be added to

the list. Pali is taught already at Calcutta and Chittagong, and we doubt whether further provision is needed at Dacca, or would be utilized to any considerable extent. Later on, if a number of students wish to study Pali, professors may be appointed and the subject included in the course. This would be to the general advantage of the University, in view of the value of the Pali language for purposes of historical study. We do not think it necessary to make provision for Latin or Greek, nor, in our opinion, need French or German be included in the general courses. It is, however, very desirable that facilities should be given for students to learn French and German, so as to enable them to read books in these languages relating to their studies. We are therefore providing for the appointment of a Reader in French and German, and we have no doubt that his time will be fully occupied. In case there is a greater demand for instruction than one teacher can supply, some professor on the general staff may be appointed to hold supplementary classes and may be remunerated by a suitable fee for this extra work. Attendance should be voluntary. As regards science subjects, we have included a full course in biology for the sake of medical as well as of general students, but we have for the present excluded geology, for which, if the necessity arises, provision can easily be made hereafter.

Junior Course in Arts.

3. The general features of the Calcutta junior course in Arts, which is designed to train the faculties and intelligence of the student by an extension of his general education, may be followed at Dacca. The course will include five subjects as follows :—

(1) English.

(2) A vernacular language (Bengali or Urdu).

(3) to (5) Any three of the following :—

A classical language (Sanskrit, Arabic or Persian).	History.
Mathematics.	Logic.
	Physics or Chemistry.

We do not think that economics or biological subjects should be included at this stage.

A University examination should be held, as in Calcutta, at the end of the junior course, and may be styled the Intermediate Examination in Arts (I.A.).

Senior Course in Arts.

4. After two years of preliminary study the undergraduate will be prepared to undertake a higher course. At this stage specialization may begin, and a marked distinction should be drawn between honours and pass students. Both classes must

continue the study of English, since a thorough knowledge of English and ease and accuracy of expression in that language are essential for the student of an Indian University. For the rest, the pass student should continue the general study of several subjects and thereby seek to attain the culture implied by a University degree, while the candidate for honours should devote himself to deeper study in a more restricted area. In adopting this scheme of University work, we are following the general movement of thought upon the subject.

5. For the pass course we would accept the Calcutta rule that English and a vernacular language should be compulsory, and that in addition two subjects should be selected from those approved by the University. We propose the following list of alternatives :—

(1) A classical language (Sanskrit Arabic or Persian).
(2) History.
(3) Economics.
(4) Philosophy.
(5) Mathematics.
(6) A science subject (Physics, Chemistry, Botany or Zoology).

In the Calcutta University all four subjects are studied throughout the course, and a single examination is held at its end. We do not think that this is the best system of study or examination for a residential University. The single examination in several subjects at the end of the course looms too largely in the career of the student, and he is tempted, as he approaches the obstacle, to overcome it by an heroic effort of cram. We therefore recommend that, while English should be studied throughout the two years of the senior course, the vernacular language and one alternative subject should be taken in the first, and the second alternative in the second year: we would also give the student the option of presenting himself for examination in his vernacular language and first alternative subject at the end of the first year. If he fails in either subject, he should be examined in it again at the end of the second year. This arrangement does not imply that a degree will be more easily obtainable, since more difficult courses and examinations may reasonably be prescribed where the burden arising from the multiplication of subjects of simultaneous study and examination is reduced. We are aware that the suggestion runs counter to the recommendations of the Indian Universities Commission of 1902, who, after some hesitation, advised against the system of "examination by compartments."

6. The honours student of the Calcutta University differs from the pass man only by taking an extra course and answering extra papers in the subject in which he is a candidate for honours. We do not think that this is the best possible arrangement. In the first place, the extent of the course is so great as to be an undue burden on the student and an insuperable obstacle to his attaining a true honours standard in his special subject. In the second place, the honours student should be regarded as different in kind and not in degree from the pass man.

He should be a student of superior ability, capable of more advanced methods of study, and desiring to attain a high degree of proficiency in some branch of learning. His instruction should be on different lines from those appropriate for pass students, from whom he should, in his studies, be altogether separated. For reasons already stated the honours student must continue the study of English, in which he should be required to take the ordinary pass course. Apart from this, he should specialize in a single subject, the course in which should be of the high standard appropriate to two years' specialized study. The following may be offered for selection :—

English.	Persian.	Philosophy.
Sanskrit.	History.	Mathematics.
Arabic.	Economics.	

Science subjects should be excluded. A student who takes the honours course in English need not take the pass course in that or any other subject ; the honours course in English should therefore be more difficult than any other. The honours examination should be taken as a whole at the end of the course.

Junior Course in Science.

7. The junior course in Science should comprise English, a vernacular language, mathematics, physics and chemistry. No alternatives should be allowed, since a thorough groundwork in mathematics, physics and chemistry is essential for higher scientific study. All five subjects should be taught throughout the course, and an intermediate examination (I.Sc.) should be held at its termination.

For medical students there will be a special intermediate course, similar in scope to the preliminary scientific examination of the Calcutta University, comprising English, physics, chemistry, botany and zoology. English, physics and chemistry should be studied throughout the two years ; whilst botany and zoology should be taught for one year only, one subject being taken in the first and the other in the second year. If a student who has passed the medical I.Sc. wishes to read for the B.Sc. instead of continuing his medical studies, he may be permitted to do so, provided that he passes the ordinary I.Sc. examination in mathematics. He may wait a year for this purpose, or he may study mathematics simultaneously with his senior subjects, presenting himself for the examination at the end of his third or fourth year.

A student who has passed the I.Sc. examination may wish to transfer himself from the Science to the Arts Department. This should not be encouraged, but may be permitted with the approval of the college authorities, provided that if the student wishes to select for the B.A. degree alternative subjects which he has not taken in the junior course, he must study for an extra year and pass the I.A. examination in those subjects before proceeding further. A student who

has passed the I.A. examination should not be permitted to take the B.Sc. course.

Senior Course in Science.

8. We consider that science students need not study English or a vernacular language beyond the junior stage, and that their senior course should comprise science subjects only. The choice will include—

Mathematics.	Chemistry.	Botany.
Physics.	Zoology.	Physiology.

A pass student should take three of these subjects—one principal and two subsidiary. This arrangement, which follows the example of several English Universities, is based on the principle that students of science should push their studies in some definite direction, utilizing subordinate studies as part of a general scheme. Subjects should be grouped in accordance with this principle, the subsidiary subjects being chosen in due correlation to the principal one. Chemistry with physics and mathematics zoology with botany and physiology, and physiology with chemistry and zoology are examples of suitable grouping. The principal subject should be studied during both years of the course, and one of the subsidiary subjects in each year. The course in the principal subject should include in the first year the subsidiary course, and in the second year more advanced study. Following the principle laid down with reference to the arts course, students should be permitted to present themselves for examination at the end of the first year in one subsidiary subject. A student taking mathematics or a science subject for the B.A. pass degree should follow the subsidiary course for the B.Sc. degree.

9. Honours students should take two subjects only—an honours course in one subject, and the principal pass course in another. The subordinate course should, as before, be chosen in due relationship to the chief subject: thus, for instance, honours mathematics with physics, honours physiology with chemistry, and honours botany with zoology. Study in the honours subject should be advanced and should cover a wide field, being so designed as to lead effectively up to the greater specialization of the M.Sc. course. A student reading for honours in mathematics, physics or chemistry should during the first year take the subsidiary course in both of the subjects which he chooses, with extra study in the chief subject; and during the second year the honours course in the chief subject, and the advanced portion of the pass course in the subordinate subject. The sub-committee for biology did not recommend that an honours student should do any extra work in his chief subject during the first year of the senior course, thus deferring the differentiation between pass and honours students until the second year. As the study of biological subjects will not begin until after the intermediate examination, we agree with the

opinion of the sub-committee. The honours course in mathematics should be the same for the arts and science degrees. A student may be allowed to take honours in a second subject not less than one year after passing the examination for his degree.

Post-graduate Course in Arts and Science.

10. The course for the degree of M.A. or M.Sc. will be confined to a single subject. Students will, in general, have already specialized for two years in the subject of their post-graduate studies, and the course for the degree of Master should therefore be of a very high standard. Instruction should be as varied and specialized as the strength of the staff will permit. Students should be allowed to select one from among the following subjects :—

(*a*) For the M.A. degree—

English.	Persian.	Philosophy.
Sanskrit.	History.	Mathematics.
Arabic.	Economics.	

(*b*) For the M.Sc. degree—

Mathematics.	Chemistry.	Zoology.
Physics.	Botany.	Physiology.

The examination should take place at the end of the two years of the course. A student who has obtained the M.A. or M.Sc. degree may, in any succeeding year, provided he has been recommended by a University Professor as having followed a suitable course of study, be permitted to present himself for examination in an allied subject.

The Degree of Doctor in Arts or Science.

11. For the degrees of Litt.D. and D.Sc. the candidate should present a thesis involving advanced study and research. The following persons should be eligible as candidates :—

(1) A Master of Arts or Science of the Dacca University, provided that not less than three years have elapsed since he passed the examination for the Master's degree. Candidates of this class may prosecute their studies and investigations in the seminars or laboratories of the Dacca University, or independently.

(2) A Master of Arts and Science (or the holder of an equivalent degree) of any other University who has worked for not less than three years in any of the seminars or laboratories of the Dacca University.

(3) A Member of the staff who has been employed for not less than three years in the University.

Selection by Students of Courses of Study.

12. Subject to the available limits of accommodation in classes and laboratories, all courses, and all subjects included in each course, will be open to all students of the University. A very considerable area of selection will thus be offered. It would not, however, be to the advantage of students that they should be allowed an unfettered discretion in making their choice. Indeed, experience shows that they require careful guidance and control. During the two stages of the undergraduate course this guidance should be given, and this control should be exercised, by the colleges, after graduation, by the University Professors. Certain general principles should be observed. Students should not be permitted to select subjects which do not form a suitable group, merely because in their estimation these are easier than others which would constitute a better course. The subjects selected for the senior course in Arts should be related to those studied in the junior course: thus a student should not be permitted to take up philosophy unless he passed the I.A. examination in logic, nor chemistry or physics, unless that particular subject was offered for his junior examination. Subjects for the senior course in science must be formed into groups the component parts of which are in proper relation to each other. A student should not be permitted to take an honours course in any subject unless the college authorities consider that his attainments are of the standard required for an honours student, nor to select an honours subject which he has not previously studied. No student should be permitted to enter on a post-graduate course unless he has been accepted by the senior Professor of the subject, and he should not ordinarily be accepted unless he has taken honours in that subject or secured distinction in the pass examination. The M.A. and M.Sc. courses will be designed for honours students, and a pass student, to follow them successfully, will require exceptional ability.

CHAPTER VII.

Arts and Science: Details of Courses.

THE introduction of a system of instruction and examination suitable to a teaching and residential University will afford an opportunity for framing courses which should vary in some respects from those ordinarily followed in Indian Universities. We have therefore thought it incumbent upon us to give an indication of the lines upon which the various subjects should be taught. To enable us to perform this duty, we appointed sub-committees to advise on each subject, or group of subjects, composed of persons of special knowledge and experience, and we explained to them fully the general character of the proposed courses and methods of instruction. We are under the greatest obligation to them for the readiness with which they came to our assistance, for the pains which they have taken and for the results of their labours. These results are reproduced, with very few variations, in the statements in Appendix I. We wish it to be very clearly understood that these skeleton courses are meant only to illustrate our meaning, and to serve in so far as they are adopted, as an initial guide for the new University, which should prescribe its own courses and vary them from time to time as experience may indicate or as circumstances may dictate.

While the general account given in Chapter VI forms a sufficient introduction to the courses in Science, the various courses in Arts require a few remarks by way of elucidation and illustration.

English.

2. Every student who graduates in Arts in a modern Indian University should speak and write the English language correctly, and should have been taught in such a manner as to enable him to discriminate between a good and a bad English style. The sub-committee have rightly held that such a knowledge of English is of much greater importance than a minute acquaintance with prescribed text-books, and the whole course of study which they have recommended has this attainment in view.

One reason for the unsatisfactory results obtained in the junior classes in Indian colleges has undoubtedly lain in the difficulty of finding suitable books. The

sub-committee do not claim to have solved fully this difficulty, but in suggesting modern novels of merit, books of travel and biographies they have shewn how a course may be made interesting to the student without losing its educational value.

The acquirement of a general knowledge of English literature carried to a high standard is the distinguishing feature of the honours course. A student who has taken B.A. honours in English will have a thorough acquaintance with the works of either Shakespeare or Milton, and he will have carefully studied a selection of representative writers, in the case of poetry from the age of Elizabeth, and in the case of prose from the age of Dryden, to our own times. Those whose tastes are purely literary will also study the general history of English literature, whilst those whose interest lies rather in the science of language will begin to specialize in that direction.

In the M.A. course specialization will be carried further, and the candidate will choose one of a number of carefully defined courses, the selection depending upon the bent of his mind in respect of his maturer studies.

Bengali.

3. The Bengali language has made great progress under British rule, and its further development should be regarded as one of the duties of the State Universities of the Bengal Presidency. We have therefore followed Calcutta in making Bengali an integral portion of the Arts course, and the sub-committee appointed for this subject have, with our approval, gone somewhat beyond the Calcutta model. The main object of the proposed course is to enable students to write clear and correct modern Bengali and to have an intelligent understanding of current Bengali literature, but the claims of classical Bengali have also been recognized by the inclusion of a selection from the older books as an alternative portion of the subject in the senior course.

The sub-committee express the view that no book should be rejected as a text or model on account of its containing words conveying ideas and sentiments peculiar to the Muhammadans, Buddhists or other sections of the population, or such words in common use among them as have not an exact equivalent in current Bengali: all indigenous sources should be drawn upon to enrich the vocabulary and to increase the expressive power of the language, so that its growth and expansion should become the common concern of every section of the people.

Bengali literature is at present permeated mainly by Hindu ideas, and there is a great paucity of literature on subjects derived from authentic Arabic or Persian sources such as will interest Muhammadan students. To remove this defect, the sub-committee suggest that the Government or the University should encourage authors to publish Bengali books of a Muhammadan character, and that such books should be included in the works prescribed as models of style.

Sanskrit.

4. We have received suggestions from several quarters that a Department of Brahmanic Studies should be incorporated in the Dacca University on lines similar to those recommended for the Islamic Department. The authors of this suggestion propose that a *tôl* should be established in Dacca in which the Sanskrit language and Brahmanic lore should be taught along with English, and that the passed pupils of this school should enter a special department of the University in which their training in English should continue, and instruction of a high order should be given in the many branches of Sanskrit learning. We referred the question to the sub-committee for Sanskrit, who advised us not to pursue it. The indigenous *tôls* of Bengal deserve a more substantial measure of encouragement and assistance than they now receive, but we doubt whether this support can best be afforded through the agency of the new University, and we consider that if it be decided to introduce an Anglo-Sanskrit course, the experiment should be made in connection with the Sanskrit College in Calcutta.

5. Whilst, for these reasons, we do not think that the Dacca University should specialize in Sanskrit on the same plan as that adopted in the case of Islamic Studies, the subject must nevertheless be given a prominent place in its curriculum. The courses proposed by the sub-committee have been so framed as to enable the student to acquire a general knowledge of the language in the junior and senior stages, the honours man being at the same time afforded an opportunity of specializing in some subject into which he will penetrate more deeply during the M.A. course. We have provided three Professors specially for M.A. work in Sanskrit as against two in other Arts subjects, and this provision should permit of a reasonable range of selection.

In order that students may be well grounded in grammar and composition, the sub-committee recommend that in the lower stages these subjects should be taught on western lines, and that the study of grammar as a technical *Sastra* should be deferred to the B.A. honours course. The genius of the Sanskrit language being essentially poetic, all books selected by the sub-committee for the junior, and the majority of those they have suggested for the senior, course are works of poetry. The sub-committee state that the study of Sanskrit has suffered in Indian Universities by the failure to bring it into relationship with other subjects. By their suggestions that a candidate studying the early history of India for the B.A. degree should be permitted to offer the original text of some of the Gupta inscriptions as part of his examination in Sanskrit, and that a candidate taking philosophy should be allowed to include in his Sanskrit course a philosophical text in the original, they indicate how this defect may be removed.

Arabic, Persian and Urdu.

6. The study of Arabic and Persian, and especially of the former,' has hitherto been somewhat neglected by students of the Dacca colleges. The establishment of a Department of Islamic Studies in the new University will, we hope, do much to revive interest in the Arabic language. A separate chapter will be devoted to the courses proposed for the Islamic Department, and those suggested for Arabic in the Department of Arts require little comment. The junior and B.A. pass courses comprise a suitable selection of text-books, both poetry and prose, and also grammar and composition. The honours course will include, in addition to a larger selection of text-books and more advanced composition, rhetoric and prosody and the history of literature. In the M.A. course candidates will carry the study of language and general literature to a higher standard, and will also specialize in a particular subject or period of literature, or in some other branch of Islamic learning.

7. Persian has hitherto been favoured at Dacca at the expense of Arabic possibly because the Persian course is comparatively easy. This bias will be removed by the courses now proposed, which necessitate a very thorough knowledge of language and literature and an acquaintance with Persian history. In Calcutta the Persian course includes some Arabic books or selections ; in Allahabad no Arabic books are set but students are required to have such a knowledge of the etymology of the Arabic language as will enable them to explain Arabic words and phrases which occur in the Persian text-books. We think that the Allahabad rule may be followed at Dacca.

Students of both Arabic and Persian will be taught to converse in those languages.

Bengali is the common vernacular of the Muhammadan students of Eastern Bengal and we do not anticipate that many will take Urdu. For those that do, a course of study may be prescribed on the lines of that suggested for Bengali.

History.

8. The pass course framed by the sub-committee will cover a fairly definite area. The student will not enter very deeply into the history of any given period, but he will have a useful knowledge of the history of India and England from the earliest time to the present day, and he will have been taught the outlines of the history of Europe during the nineteenth century. During the junior stage he will also have studied the history of Rome. Thus at the end of the course he will enjoy such a knowledge of history as a well-educated man should possess.

A candidate for honours will be expected to have a thoroughly sound knowledge of the history of Europe and of India, to be familiar with the later constitutional history of England, and to have studied in detail a special subject or period.

In the M.A. course an attempt is made, on the one hand to complete the student's knowledge by including in his studies early English constitutional history, international law and political science, and on the other to carry further his specialization by requiring him to study a particular period in connection with original printed authorities and the life and work of some eminent statesman. Candidates will also be expected to take one out of a number of alternative subjects, some of which, such as political economy, are familiar features of any advanced course of history, whilst others, such as a special subject in the history of thought, literature or art, are comparatively new to India.

Economics.

9. The course of economic studies suggested by the sub-committee is designed at the same time to promote the general culture of the student, and to fit him for any career in which he may be called upon to deal with business affairs.

Descriptive economics is given a prominent place in the B.A. course. The student of a western University is well acquainted with the elementary facts upon which economic theories have been built. For him the reading of a text-book on economics is comparatively easy; in it he finds in an organized form much of his previous knowledge and experience. The disadvantage under which an Indian student labours in this respect can only be removed by introducing him at an early stage to the common facts of industrial processes and organization. Simple descriptions of the materials, conditions and methods of the more important industries, including agriculture, will form the chief portion of this branch of the subject, which will also include the usual matters dealt with in text-books on commercial geography and Indian economics. Special attention should be paid to local economic conditions and activities, and in dealing with these students should be encouraged to cultivate their powers of observation and to get into touch with practical affairs.

The same principle of scholarship in close contact with the actualities of economic life should govern the scheme of M.A. studies. The course, besides covering the more advanced generalities of the subject, will allow specialization, on the one hand so broad as to give scope to the student's particular abilities, on the other hand so limited as to afford him time to consult original sources of information and to gain a thorough mastery of the conclusions already reached by accepted authorities. A student embarking on such a specialized course of studies need not necessarily follow the beaten track; a problem like the famine problem, an industry like the cotton industry, a period of economic history, the works of a great economist, any of these would furnish him with ample opportunity for study and research, for the materials would be scattered, and their collection and systematic treatment would involve wide reading and careful and original thought. These individual studies will necessarily be guided by the economic interests and trend of research of the seminar.

Philosophy.

10. A student will not be ripe for the study of philosophy until he has completed the junior course: this course therefore includes only such elementary instruction in logic as will serve as a useful preliminary training for students of philosophy and of other Arts subjects. The proposals of the sub-committee for the B.A. course add to the elements of logic, elementary psychology and ethics, and combine with these the reading at first hand of one or more accepted masterpieces of philosophical writing in English, which are not too difficult in style and are calculated to arouse interest in speculation. The honours course is planned to inculcate a sufficient discipline in logic, psychology, ethics and general philosophy, with the addition of that training and practice in free speculation which is the most valuable result of philosophic study. As in the pass course the greatest stress is laid on the first-hand study of works of genius, the writings of the great succession of European philosophers from Descartes to Kant, whose works, regarded as an organically connected series, form the natural introduction to any serious consideration of the problems of modern philosophy. Finally, the M.A. course is designed to join with a more extensive survey of general philosophy specialization, including independent handling of the materials studied, in one of several directions.

Mathematics.

11. The intermediate course in mathematics is compulsory for all students of science (except medical students), and the standard required will be attained without great difficulty by the industrious student of ordinary capacity. The intermediate examination alone will hardly suffice to test whether a candidate possesses the special ability which will enable him to follow advanced courses. The sub-committee have therefore included a special paper of more difficult questions on the subjects of the ordinary course. The marks allotted to this paper will not count towards the aggregate, they will be used merely to enable the University authorities to discriminate among students desiring to take up either the honours or the principal course. The more advanced courses in mathematics do not stand in need of special explanation.

CHAPTER VIII.

Arts and Science: Methods of Instruction and Study.

THE University should train its students by means of lectures, tutorial instruction laboratory and seminar work, and supervised private study. Endeavour should be made so to utilize staff and equipment as to secure variety and thoroughness of instruction, and to this end full use should be made of opportunities afforded by the close proximity in which the various colleges will stand to one another and to the University buildings.

Science in all its branches—from the junior course to the research work of the most advanced students—should be taught by University Professors in central laboratories designed to serve the Departments of Science, Medicine and Engineering. This arrangement will be more efficient and economical than the provision of smaller laboratories in different colleges and for different departments.

Instruction in Arts subjects should be given to undergraduates by the colleges, and to graduates by the University in its seminars. A very free use should be made of the inter-collegiate system. In the junior stage, in which the number of students per subject will be comparatively large and the courses comparatively simple, the bulk of the work will be done separately for each college. In senior Arts classes, except in the pass course in English, the number of students will not be so large as to prevent them all attending lectures together, and B.A. lectures (both pass and honours) should therefore be inter-collegiate. This arrangement will enable the various professors of a subject and their assistants to take up different portions of the course, thus securing more varied and efficient instruction. It may entail the delivery of lectures to audiences of one hundred or more, but we do not think that this is undesirable. In the case of tutorial work classes should be kept as small as possible, since "the active participation of the individual on which the superiority of the exercises depends diminishes as the number grows," but there is no objection to large classes for lectures. On the contrary, "the effectiveness of the lecture is increased to a certain degree by the number of hearers. We are apt to speak in another strain to a hundred than to ten or five hearers; the many eyes that look up to the lecturer give wings to his thoughts, and lend his words such force and animation as cannot be attained within a narrow circle." Careful arrangements must be made to ensure that all can hear the lecturer, and a properly fitted theatre should therefore be provided

in each college for lectures on subjects which attract large classes. It is to the tutorial system that we look to secure that steady progress on the part of the student which is the aim of all good teaching. Tutorial work will include supervision over the reading of students, explanation of intricate points and passages in lectures and books, and the setting, correction and discussion of exercises. Tutorial work in the senior stage will be given within the college or by inter-collegiate arrangements, as the circumstances of each case may require. Here, and on all occasions, colleges should co-operate with one another to prevent waste of power and to secure economy and efficiency.

We must now examine in somewhat greater detail the arrangements appropriate to different stages of the Arts and Science courses. It should be understood that in making suggestions regarding the number of hours of instruction, the size of classes and similar matters, we do not for a moment suggest that these should be prescribed by hard-and-fast rules. Such questions should be settled by the appropriate University authorities in the light of experience and according to the requirements of the time being. But it is necessary to state general conclusions, in order both to explain how it is proposed that the University shall work, and to frame an estimate of the staff and equipment that it will require.

Junior Course in Arts.

2. The young undergraduate must be treated as a University student, and not as a school-boy; yet he is hardly ripe for courses of true University lectures, nor in many cases is his knowledge of English sufficient to enable him to profit by them. A simpler and more explanatory form of instruction, involving some degree of individual attention, is required. Such instruction can be given only in comparatively small classes, and we think that they should not contain more than 40 students. But for the great expense involved by the multiplication of junior classes, we would have suggested a lower figure. At this stage the closest attention should be paid to English, for unless the student learns to understand quickly and to express himself easily, he will be most seriously handicapped throughout his University career. It will assist young students if they are brought as much as possible into contact with European teachers. The English course should include five hours' class work a week, and one general lecture designed to stimulate the students and to introduce them to more advanced University methods: class work should include exercises and essays to be discussed in class after correction. In mathematics, a subject which many students find to be very difficult and to require much explanation, there should also be five hours' class work; for other subjects four hours should suffice, one of which may occasionally be devoted to a general lecture to combined classes. For Bengali one hour's instruction a week will be enough.

B.A. Pass Course.

3. After passing the intermediate examination, the student should be fit to receive instruction in the form of general lectures supplemented by tutorial assistance. It is not easy to determine the way in which this latter may best be given. Experience shows that, in order that good results may be obtained, pass students require a very considerable measure of help. One or two short periods a week would not be sufficient, whilst it would not be possible to give even this amount of instruction to students separately or in pairs without employing a staff the cost of which would be prohibitive. After discussing various alternatives, we have come to the conclusion that small classes of not more than 20 will afford the best solution. On the one hand, such classes will not be so large as to prevent the teacher from appreciating the difficulties of individual students, or from giving separate attention to each member of the class; on the other hand, if the students are taken in groups of 20, an adequate amount of time can be devoted to each group. On this basis the week's work during each year of the senior pass course might be arranged as follows:—

English	{	3 hours' lecture. 5 hours' tutorial class.
Each other subject ...	{	5 hours' lecture. 5 hours' tutorial class.

In the first year there will also be two hours' class work in Bengali or Urdu. The number of hours lecture in English is put at 3 instead of 5, because this subject is studied during both years of the course.

Lectures in an Indian college are often an unsatisfactory compromise between the true lecture and the tutorial class. The very considerable measure of tutorial assistance which we propose, should obviate the necessity for any such compromise, and the lecture should take its proper place as a means of arousing the interest of the student and of assisting him both to obtain a firm grasp of his subject and to view it in true perspective.

B.A. Honours Course.

4. As the number of honours students will be comparatively small, and as they will need less tutorial assistance, they may be given this form of instruction in pairs instead of in classes : we suggest in pairs rather than separately, both for the sake of economy and because many students work better when taught two at a time. Arrangements for the instruction of honours students should be more elastic than those prescribed for other classes; but it may be laid down as a general recommendation that an honours student should be given twelve lectures (including those

in English) and one hour's tutorial instruction during each week. It may be left to the discretion of the student, or of his college authorities, to determine whether he will attend tutorial classes in English.

Course for the M.A. Degree.

5. When a student has graduated and begins his specialized studies for the M.A. degree, the character of the instruction should change in accordance with the higher stage of his intellectual development and the more advanced nature of his studies. He should be trained in habits of accurate and scientific investigation, and the original qualities of his mind should be exercised. He should work under and with, and not merely be taught by, his professor. Lectures, seminar work and well-supervised private study should be the features of this portion of the course.

Instruction in each subject should centre in a seminar. This should comprise a lecture room and two or more rooms situated in close proximity to the University library. The seminar should contain a complete reference library within the limits of the ordinary purposes of M.A. work, which should be supplemented, in the case of rare books which are not in common use, from the University library. Students should be given facilities to take out, during the day of issue, such works from the University library as they may require for use in the seminar. The seminar should also be provided with illustrative equipment, pictures, maps, charts, models. etc., such as may give greater life and reality to the studies they promote. The archæological and historical museum which it is proposed to establish in connection with the University will be a useful adjunct to the history seminar, and should be placed under the charge of the senior Professor of History. Facilities, as far as possible, should be afforded for study from original sources, printed or otherwise, use being made in this connection of any special local material that may be available. The old Government records of the Eastern Bengal districts and Sylhet contain much valuable information, and the task of calendaring them, which was begun by the Rev. Mr. Firminger, might well be entrusted to the University. Many documents illustrative of earlier periods which exist in Bikrampur and other parts of the eastern divisions should be collected for the museum.

It will be the duty of the Professor to lay down for each of his students a complete scheme of work, and to help him in various ways to carry that scheme out. The number of lectures which a post-graduate student should attend will vary with the nature of his course ; twelve lectures a week may be laid down as a general standard. Some of these lectures will be common to all students of the year, others will relate to more specialized portions of the course, the variety of teaching and study depending on the strength and qualifications of the staff and the capacity of the students. The reading of original papers and essays by students, and criticism and comment upon such papers by members of the seminar and the presiding

professor, should form an important part of the training. The professor should conduct the debate and, gathering up the points and results, offer his own comments and criticisms, not only on the paper read, but also on the views and attitude of the different members. During the year each member of the seminar should be required to read a certain number of papers, which should not be miscellaneous fragments, but parts of a connected whole. When not attending lectures or discussions the student will carry on his private reading in the seminar, in the library, or in his room. These private studies should be guided by the professors, and the number of students will not be so great as to prevent a due amount of attention being paid to each.

Science Courses.

6. Methods of instruction in Science differ considerably from those applicable to Arts: Science lectures with their practical demonstrations are not the same in form or method as general lectures on Arts subjects, and laboratory work is a vital element in the training, taking the place of tutorial classes and seminar work, and, as the student advances, becoming his main occupation. The sub-committees on physics and chemistry and on biological subjects differ in their recommendations as to the number of lectures and amount of practical work appropriate to each stage of the course, the latter recommending fewer lectures in proportion to the practical work. The difference is due to the character of the respective subjects, and we think that the recommendations of each sub-committee may be accepted without any endeavour to reduce them to uniformity. The unit of calculation being a week, they are as follows:—

Physics and Chemistry.

I.Sc.—3 lectures during two years.
2 practical periods (each 1½ hours) during one year.

B.Sc.—Subsidiary course ... 5 lectures.
4 practical periods (2 hours each).

Advanced course ... 2 lectures.
2 practical periods (2 hours each).

Honours course ... 5 lectures: as much time as possible to be spent in the laboratory.

Botany, Zoology and Physiology.

I.Sc.—(Medical) ... ... 2 lectures.
2 practical periods.

B.Sc.—Subsidiary course	...	3 lectures.
		4 practical periods.
Advanced course	...	2 lectures.
		3 practical periods.
Honours course	...	3 lectures: as much time as possible to be spent in the laboratory.

A practical period to count throughout as $2\frac{1}{2}$ hours.

These estimates have been drawn up with due regard to the time-table for laboratory work. We are proposing staff and accommodation for the University laboratories on a fairly liberal scale; but even with such provision, unless courses and periods of practical work are carefully adjusted, there will be waste of power, and the number of students who can be admitted will be considerably restricted. Science lectures even in the intermediate stages may be given to large audiences, and need not, as in the case of Arts subjects, be confined to classes of 40 students.

In the M.Sc. stage advanced courses of lectures should be given on special subjects and topics, and students should devote most of their time, under the supervision of the professors, to practical work in the laboratory. Professors should require students to carry out special pieces of advanced practical work, the results of which should count towards the M.Sc. degree. Students of zoology should be allowed to spend a portion of their time in study at some institution such as the Indian Museum or the Research Institute at Pusa. The experimental farm at Dacca will afford to advanced students of botany opportunities for specialized study in certain directions.

Research and the Litt. D. and D.Sc. Degrees.

7. We regard it as of the greatest importance that advanced study and research should be given a prominent place in the Dacca University. It will not fulfil its purpose as the pioneer teaching and residential University, unless it realizes that its duties extend to the advancement of knowledge as well as to the general training of its students. The interest attaching to research work exercises a very powerful influence on the teaching throughout a University, and tends to raise its general tone; indeed it is only where the stimulus of higher work and the daily intercourse of those engaged in it exist, that any true University atmosphere can be created. The Professors and lecturers should be afforded every possible inducement and encouragement to work on the edge of their subjects, and we hope that they will communicate their ideals and methods to their pupils. The staff and equipment which we propose should be fully equal to the task, and Indian students, given the requisite opportunity, have shown themselves to be capable of advanced work. An Indian parent can rarely afford to support his son at a University after he has taken the degree of Master, and it will therefore be necessary to grant scholarships

to a certain number of students to enable them to remain for research work. Research scholarships should be awarded with the greatest care, should be granted only to students of exceptional merit, and should be continued to them only for so long as the quality of their work justifies it. We recommend that, if suitable candidates are available, five research scholarships should be granted each year of the value of Rs. 100 a month tenable for three years, the minimum period of preparation for the degree of Litt. D. or D.Sc. In the selection regard should be had to the claims of different subjects as well as to the merits of individual students. A research student should submit for approval the special subject which he proposes to investigate, and he should be required to work in the appropriate seminar or laboratory under the direction of a Professor to whom he will be specially attached. This Professor will present to the University authorities a half-yearly report on the work and progress of the student, and on the result of these reports the scholarship will be subject to annual confirmation. A research scholar should be required to take some part in the teaching of the University, preferably by the delivery of short courses of lectures on the subject in which he has specialized. If properly regulated, so as not to interfere with the main work of the scholar, such teaching will be of great advantage by training him to marshall his knowledge and to give ordered expression to his ideas. The student should enter on his special work as soon as he has taken his Master's degree; if he voluntarily relinquishes it during the period that his scholarship continues, he should be liable to refund the amount already drawn. As proposed by the Indian Universities Commission, the 25 years' age-limit for entering Government service should be relaxed in the case of research students. We further suggest that the University should issue a quarterly journal for the publication or republication of papers giving the results of original research on the part of both professors and students.

CHAPTER IX.

Arts and Science: Examinations.

We have explained in Chapter VI the general place which examinations should hold in the Arts and Science courses, and Appendix I illustrates the scope and character of the examinations suggested for the different subjects.

In a small teaching and residential University examinations may be conducted in a manner which would not be practicable in a large federal institution. Examinations should be subordinate to teaching: they should be used as an element of training in the power of concentration and expression, as a method of testing whether students have faithfully followed the courses of instruction provided by the University, and as a means for grading students and for bestowing suitable marks of recognition on distinguished scholars.

Methods of Examination.

2. The University examinations should include question papers, oral and practical tests, and theses for advanced students.

For intermediate examinations the usual mark system should be employed in valuing the answers to question papers. The questions should be simple and straightforward, directed to discovering what the student knows rather than to test his ingenuity: with papers of this character a high standard of performance should be required. The questions in the printed examination papers should not be lettered with a value in marks: the distribution of marks over the paper is best done by the examiners in consultation after the paper has been set and answered. For higher examinations than the intermediate the numerical mark system should be abandoned. In estimating a paper the examiner should mark by a symbol his impression of it as a whole, checking his results in any way that he thinks fit, as, for instance, by lettering each question, or even by assigning a numerical mark. This system is in accordance with the best traditions of a teaching University.

After considering the opinions of the subjects sub-committees on the question of text-books, we consider that, while books must be prescribed in the case of examinations in literature, they should not be set for examinations in other subjects, except in so far as may be required to indicate the standard or content of a course.

The sub-committees for English and for Arabic and Persian laid stress on the need for a colloquial test. We agree with this opinion, and consider that separate credit should be given in the examinations in these subjects for proficiency in conversation. At least ten minutes should be allowed for the examination of each candidate, in order that he may have time to recover from any initial nervousness. As regards English, the introduction of a colloquial test at all stages is likely to induce colleges to pay greater attention to conversation, a result of such importance as to repay the extra trouble and expense that will be entailed in connection with the examinations. We accept the opinion of the Sanskrit sub-committee that no conversational test is necessary for that subject, but there should be a test in reading or recitation.

We referred to sub-committees the question whether there should be an oral test in subjects other than languages. We find ourselves in accord with the balance of opinion, which is in favour of an oral test in all examinations above the intermediate, to be regarded as supplementary to the written examination and to be used in doubtful cases to determine whether a student should be held to have passed, or in what class he should be placed.

3. In Science examinations great importance should be attached to practical work, a practical test being held at every stage of the course. The practical examination in physics and chemistry at the intermediate stage may present some difficulty owing to the large number of candidates, but with careful organization this may be overcome. The value to be attached to the practical as compared with the theoretical portion of the examination will vary according to the nature of the subject. The following recommendations on this point of the subjects sub-committees would appear to be suitable :—

I.Sc.—Physics	...	... Two-fifths.
Chemistry	...	... One-half.
Botany and Zoology		... Equal.
B.Sc. (Pass and Honours)—		
Physics	...	... Two-thirds
Other subjects	...	... Equal.

Due credit should be given to students for practical work done during the term and properly recorded in note-books, the merit of such work being adjudged by the professor and one of the examiners in consultation.

4. The question whether a thesis or piece of research work should be prescribed as a portion of the examination for the M.A. and M.Sc. degrees has given rise to some diversity of opinion among the sub-committees, due partly to the fact that the system is more appropriate for some subjects than for others. The general opinion is in its favour, and we consider that it will tend to encourage a sound system of study in the post-graduate course. It should represent a substantial

amount of work; it ought to be such as to show that the student has made independent use of the best authorities on the subject, and that, when its nature admits, he has verified its contents for himself. We do not think it necessary to lay down an invariable rule that there should be a thesis in all subjects, or to prescribe whether such a thesis, if allowed, should be compulsory or optional.

Grading of Candidates.

5. We suggest the following grading for the various examinations :—

Intermediate.—33 per cent. in each subject for a pass, and successful candidates to be arranged in three classes, 50 per cent. in the aggregate securing a second, and 70 per cent. a first class.

B.A. and B.Sc. Pass.—No division into classes, but distinction to be awarded to candidates in individual subjects according to the general estimation of their papers.

B.A. and B.Sc. Honours.—Candidates to be graded in three classes. A candidate who fails to obtain honours may be given a pass degree, provided that he shows attainments which are distinctly superior to those which would secure a degree in the ordinary pass examination. It is necessary to safeguard the concession in this manner, lest students be tempted to obtain a pass degree by taking two instead of three subjects.

M.A. and M.Sc.—Candidates to be graded in three classes.

Conduct of Examinations.

6. A separate Board of Examiners should be appointed for each subject in each examination. The Board should be composed of all examiners in the subject, whether appointed to set papers or to examine replies; ordinarily persons appointed to set papers should also examine them. The members of the Board should conduct the oral and practical examinations in addition to the paper work, special assistance being afforded to them where necessary. The majority of the examiners should be the professors and their assistants engaged in teaching the subject in the University, but, if suitable persons can be secured, one or more external examiners should be appointed. The senior internal examiner should be Chairman of the Board, and he should appoint one of the members to act as Secretary. The size of the Board will vary according to the nature of the examinations; thus, for instance, we estimate that for the I.A. examination in English about eight examiners will be

required; for the M.A. in English, six; for the I.A. in history, three; for the M.A. in history, four.

The paper-setters should first meet to arrange for the setting of papers, and, if necessary, they should meet again to discuss them when set. After the examination the Board (including both paper-setters and examiners) should meet to settle preliminaries and to distribute the papers for examination. It should be a duty of the Chairman of the Board to inspect some papers of each examiner and to advise his colleagues upon the question of standard, any difference of opinion being settled by the Board. After the various papers have been marked or lettered, the Secretary will prepare a list showing the results obtained by each candidate in each paper. The Board will then meet to decide which candidates shall be deemed to have passed, and in what class they should be placed, or what mark of merit should be assigned to their work. At this stage all doubtful cases and abnormal results should be investigated, and any necessary correction should be made. In the case of the intermediate and graduate pass examinations a general Board for the whole examination must be assembled to decide which candidates have passed, and, in the case of the I.A. and I.Sc. examinations, in which grade they should be placed. In honours and M.A. and M.Sc. examinations this will not be necessary, since these examinations do not depend on the combined results of examinations in several subjects. The General Board for an examination should be composed of the chairmen of the Subjects Boards with the addition of one or more external examiners if this is considered desirable by the Council of the University.

It is of great importance that examinations should be conducted with energy and despatch, and that they should not be allowed to drag on through a considerable period of time, thereby upsetting the organization and progress of instruction. In a residential University of the size of Dacca one month should suffice for the entire range of examinations—from the junior to the M.A. The setting and marking of papers, the supervision of written examinations, and the conduct of oral and practical tests, will occupy the greater part of the staff while the examinations are in progress. It appears to us that the best plan will be to finish most of the teaching a month before the long vacation, and to utilize that month for the examinations of the University. The members of the staff will thus be left free to devote themselves to the careful and vigorous conduct of this important part of their duties.

Financial Arrangements.

7. The rates of examination fees levied from candidates in Calcutta may be adopted for Dacca. We are of opinion that, as in other Universities, examiners, including those who are members of the University, should be remunerated by fees. The Calcutta rates, subject to some modification mainly in the direction of levelling the rates for the intermediate and graduate examinations, may be taken as the basis

for calculation. The examination of the junior classes is a difficult task, and its careful and skilful performance will be of the utmost importance to the University: the work should not, therefore, be depreciated by the payment of a comparatively low fee. We suggest the following rates —

	Rs.
For setting papers—	
I.A., I.Sc., and B.A. and B.Sc. (Pass and Honours) ...	50 per paper.
M.A. and M.Sc.	75 ,,
For examining papers—	
I.A., I.Sc. and B.A. and B.Sc. (Pass)	1 ,,
B.A. and B.Sc. (Honours) and M.A. and M.Sc. ...	2 ,,
For practical examinations—	
I.Sc. and B.Sc.	3 per head.
M.Sc.	4 ,,
For oral examinations	2 ,,

We have examined the financial effect of these proposals in the light of a rough estimate of the number of candidates and papers in the various examinations. The fees will about serve to cover the expenditure, a deficit in the higher examinations being covered by a surplus in the lower. In a small University such as Dacca it is not to be expected that any profit will accrue from the examinations, and, in the case of professional and other special examinations, a small grant will be required to supplement the fees.

Students who Fail.

8. The question of students who fail is difficult, and in recent years has greatly troubled the colleges of the Calcutta University. In the University of Dacca the treatment of the question should be governed by the following principles :—

(1) In so far as is possible, students who are not altogether idle or stupid should be given a chance of redeeming their failure.

(2) Candidates who have failed should not be readmitted to examination except at the end of a course of studies in the University.

(3) The number readmitted to college after failure should not be so great as to crowd the classes or unduly to restrict new admissions.

(4) Students after failure should be placed under special supervision, and should be required to take courses of sufficient content to occupy their time and to prevent them from being idle.

In conformity with the above principles a student failing at the intermediate examination, but not regarded as hopeless, may be readmitted for an extra year's course,

provided that the number of readmissions does not exceed 20 per cent. of the total number of students in the second year. The arrangements to be made for the work and examination of such students should be elastic, and should be designed to give them the best opportunity of fitting themselves for the senior course. A candidate failing at the ordinary examination for the B.A. or B.Sc. degree may be readmitted, under similar conditions, for the purpose of further study and re-examination in the subjects in which he failed. If he failed in one subject only, he should be required to take in addition another subject (which may be one of those in which he has already passed), to be selected by him, subject to the approval of the Principal of his college. An honours candidate who fails altogether may be re-examined after a further year's study of his honours subject, but if successful will only receive a pass degree. A candidate who fails at the M.A. or M.Sc. examination may similarly be re-examined once, but should not be eligible for more than a third class.

College Examinations.

9. We consider that college examinations to test the fitness of students to present themselves for University examinations should not be held; such duplication throws an undue burden upon students, and ought not to be necessary under the arrangements for instruction which we have proposed. A careful record should be kept of the work of each student, and on this record, and on the general reports of his teachers, the college authorities should decide whether to send him up or to withhold him. A promotion examination should be held at the end of the first year of the junior course.

CHAPTER X.

Arts and Science: Staff.

HOWEVER favourable other conditions may be, the new University will not be a success unless it possesses a staff numerically sufficient, highly qualified and well organized. We have had to face no question more difficult, no problem more important, than the provision of an adequate staff within the limits of a reasonable expenditure.

2. The number of teachers required depends on four main factors: the number of students in each subject, the length of their courses, the amount and nature of the instruction which they receive, and the amount of work which may be assigned to each teacher. Details regarding courses and instruction have been given in Chapters VI to VIII, and an estimate of the number of students taking the various subjects at each stage of the courses is contained in Appendix II. The figures in this appendix are based on data supplied by the Dacca and Jagannath Colleges, amended, in so far as we can foresee, to meet the altered conditions of the new University; they include also students of medicine and engineering. The estimate must necessarily be a very rough one, and the staff will doubtless require some modification and adjustment in the light of experience. As regards the last of the four factors, whilst it is obvious that some kinds of teaching and lecturing work impose a greater strain or involve more preparation than others, we consider that a teacher may fairly be expected to deliver on an average 12 to 14 lectures a week, or to give 20 hours' tutorial instruction, junior classes being included under the latter category. Neither the setting and correction of essays, papers and other exercises, nor the college and University work to be performed outside the lecture theatre and the class room, are included in this estimate. Whilst every member of the staff should be given adequate employment, they should not be overburdened so as to deprive them of opportunity for independent reading, thought and investigation.

3. Working on these lines, we arrive at the following estimate of the staff that will be required for the Departments of Arts and Science.

Arts.

	I. E. S.	P. E. S.	S. E. S.	J. A.
English	4	12		8
History	4	2		4
Economics	2	3		1
Philosophy	1	6		3
Bengali	...	2		...
Sanskrit	...	6		4
Persian	...	2		1
Mathematics	3	4		4
Total ...	14	30	7	25

Science.

			Demonstrators.	
Chemistry	3	4	6	5
Physics	2	3	5	4
Botany	1	2	2	...
Zoology	1	2	2	...
Physiology	1	2	2	...
Total ...	8	13	17	9
Grand Total for Arts and Science	22	43	24	34

I. E. S. = Officers of the Indian Educational Service.

P. E. S. = Officers of the Provincial Educational Service.

S. E. S. = Officers of the Subordinate Educational Service.

J. A. = Junior Assistants—young graduates appointed on temporary terms: *see* page 55.

Instruction in Bengali will be given by members of the staff for Sanskrit and by the extra officers entered under this head who will give supplementary lectures under the inter-collegiate system. Students taking Arabic will be taught by the staff of the Department of Islamic Studies, and this staff will be in a position to supplement the special provision made for Persian. One of the professors of mathematics should be competent to give instruction in mathematical physics in the Science Department, and one of the teachers of chemistry to lecture on geology to engineering students.

4. The Arts staff may be divided between the various colleges and the University as follows :—

	Dacca College.	Jagannath College.	New College.	Muhammadan College.	University.	Total.
English—						
Indian Educational Service ...	1	...	1	1	1	4
Provincial Educational Service and Subordinate Educational Service.	5	3	2	2	...	12
Junior assistants	2	2	2	2	...	8
Total ...	8	5	5	5	1	24
History—						
Indian Educational Service ...	1	...	1	1	1	4
Provincial Educational Service and Subordinate Educational Service.	1	1	...	...	...	2
Junior assistants	1	1	1	1	...	4
Total ...	3	2	2	2	1	10
Economics—						
Indian Educational Service ...	1	...	...	...	1	2
Provincial Educational Service and Subordinate Educational Service.	1	...	2	...	...	3
Junior assistants	1	...	...	...	...	1
Total ...	3	...	2	...	1	6

	Dacca College.	Jagannath College.	New College.	Muhammadan College.	University.	Total.
Philosophy—						
Indian Educational Service ...	...	...	...	...	1	1
Provincial Educational Service and Subordinate Educational Service.	1	3	1	1	...	6
Junior assistants	1	1	1	...	...	3
Total ...	2	4	2	1	1	10
Bengali—						
Provincial Educational Service and Subordinate Educational Service.	1	1	...	...	...	2
Sanskrit—						
Provincial Educational Service and Subordinate Educational Service.	1	3	1	...	1	6
Junior assistants	1	2	1	..	...	4
Total ...	2	5	2	...	1	10
Persian—						
Provincial Educational Service and Subordinate Educational Service.	...	...	...	2	...	2
Junior assistants	...	...	...	1	...	1
Total ...	...	...	...	3	...	3
Mathematics—						
Indian Educational Service ...	1	...	1	...	1	3
Provincial Educational Service and Subordinate Educational Service.	1	1	1	1	...	4
Junior assistants	1	1	1	1	...	4
Total ...	3	2	3	2	1	11

	Dacca College.	Jagannath College.	New College.	Muhammadan College.	University.	Total.
Grand Total—						
Indian Educational Service ...	4	...	3	2	5	14
Provincial Educational Service and Subordinate Educational Service.	11	12	7	6	1	37
Junior assistants	7	7	6	5	...	25
Total ...	22	19	16	13	6	76

5. The outline given in the above statements requires to be filled in with a certain amount of detail.

In the first place, it will be remarked that the grading of teachers is expressed in terms of the three divisions of the Government educational service. One of the existing colleges to be incorporated in the University, the Jagannath College, is an aided institution; the members of its staff are not in Government service, and draw pay at a comparatively low rate. It is most desirable that the professors of the Jagannath College and their assistants should be of the same status and have the same emoluments and privileges as the rest of the University, and we therefore propose that, if suitably qualified, they should be admitted to Government service. The Jagannath College, like all other institutions of the new University, will be housed in a Government building, and maintained by a Government grant supplemented by fees; there is therefore nothing in the conditions which should occasion difficulty in carrying out a change which will, we hope, prove acceptable to the trustees of the college. The New College, the Muhammadan College, the Women's College, the College for the well-to-do Classes and the professional colleges and departments will also be Government institutions. If in the future an endowed or other private college should seek incorporation into the University, the propriety of granting its request will be a question for consideration by the Government and the University on the merits of the case. The general organization of the University should allow for the possibility of such incorporation; it should also allow full scope for the endowment of professorships for special subjects or courses.

6. The time of the Principal of a large college is at present so taken up by his multifarious duties, that he is unable to take an adequate part in the work of instruction; it would be a great pity if some of its best teaching power were thus lost to the new University. In a later chapter we suggest a centralization of accounts work which will relieve Principals of routine duties which at present take up a good deal of their time. A Principal should also be at liberty to devolve part of the business

work of the college on a member of the staff, who might be styled the bursar : this officer, being merely a deputy of the Principal, should not relieve the latter of the responsibility which properly belongs to him. We have not included the Principals in the enumeration of the teaching staff : they should be regarded as an addition to its strength.

7. Including the Principals of the four Arts colleges, the total number of teachers in the Departments of Arts and Science will be 127. If we divide the estimated number of students in these departments (2,270, including students of engineering and medicine who also receive instruction from other sources) by 127, the result will be 18, a figure 3 in excess of the maximum proportion recommended in 1906 by the Calcutta University Commission on Mufassal Colleges.

8. The grading of the staff in four divisions, as shown in the statements in paragraphs 3 and 4, has been made after a careful consideration of the requirements in each subject for both general and higher teaching, and gives, we think, a fair admixture of teachers of different class and calibre.

The number of Indian Educational Service officers is approximately one-sixth of the total—not at all an extravagant proportion. The number proposed for history is above the general level : this is due to the wish expressed by our Muhammadan colleagues that an Indian Educational Service Professor of History should be appointed to the Muhammadan College, both to increase the European element on the staff and also to take part in the teaching of the extensive course of history included in the Department of Islamic Studies. No Indian Educational Service Professor of Sanskrit and only one Indian Educational Service Professor of Philosophy are included in the statement, the reason being that good teachers, even for the higher work, can readily be obtained in the Provincial Service. Although in the statement the Professor of Physiology is graded with the Indian Educational Service officers, he should, as proposed by the sub-committee on medicine and approved by the sub-committee on biology, be a senior medical officer. Similarly the Professors of Botany and Zoology may be members either of the Indian Educational Service or of the Indian Medical Service, or they may be appointed on special terms.

In the statement in paragraph 3, the 37 officers of the Provincial Educational Service and Subordinate Educational Service teaching Arts subjects are divided into 30 of the former and 7 of the latter class. This division is in accordance with existing practice, a certain number of Assistant Professors in subjects such as English, Sanskrit and Philosophy being members of the lower service. One of the Professors of Bengali should also be a Subordinate Educational Service officer. Assistant Professors in the Subordinate Service should begin on not less than Rs. 100, and their average pay for purposes of compilation may be taken at Rs. 150 ; if they show sufficient merit they should be eligible for promotion to the Provincial Service. Teachers of biology included under the head of the Provincial Educational Service may either belong to that service or to the subordinate medical department. Demonstrators for science

should, as at present, be members of the Subordinate Educational Service, or, in the case of biological subjects, they may be recruited from among the Sub-Assistant Surgeons.

9. The fourth category—that of junior assistants—requires explanation. In many Universities young graduates take an important part in the work of instruction, especially in tutorial work. It appears to us that full use has not been made of this very useful agency in India. A man who has passed the M.A. examination with credit should be quite capable of giving tuition both to senior and junior classes, to act as a demonstrator, or even to deliver lectures. The employment of men at this stage will enable the University, by increasing the proportion of teachers to students, to lessen the size of junior classes and to give a larger measure of tuition in the senior course, without incurring the great expense of making large additions to the Indian and Provincial Services. The University, moreover, will benefit if the more distinguished of its young graduates, instead of taking flight immediately on securing the Master's degree, remain to participate in its teaching, its research work and its general life. They will supply a link, which is at present lacking, between teachers and students, and will help in welding the component parts of the University into a corporate whole. From the point of view of the young graduate the proposal should be a great boon. On leaving the University he often remains for several years seeking for employment, without occupation, and very likely in pecuniary difficulties. Under the scheme now suggested he would remain in his University, performing useful work and adding to his knowledge and efficiency, until such time as he is promoted in the teaching profession or enters some other walk of life. The professoriate of the Dacca University should ordinarily be recruited from among its research students and junior assistants, and both classes are likely to find ready employment in Government and private colleges outside their own University. The recruitment of junior assistants should not, however, be confined to candidates for the teaching profession: thus, for instance, many distinguished graduates who are candidates for the executive service might pass the years immediately after taking the M.A. or M.Sc. degree with great advantage to themselves and to their University as junior assistants. Since the employment of young graduates immediately after they have taken the degree of M.A. or M.Sc. is the essence of the scheme, the appointment should not ordinarily be made for more than three years. If at the end of this term no other candidate is available, the period may be extended, especially in the case of an efficient junior assistant who proposes to enter the teaching profession. In the absence of suitable candidates belonging to the Dacca University, young graduates of Calcutta may be appointed to be junior assistants: for some years to come this course must in any event be followed, and it may even be necessary to appoint officers on special terms until such time as the new University produces Masters of Arts and Science in sufficient numbers to form an adequate field for the recruitment of junior assistants. The pay of a junior assistant may be fixed at Rs. 100 a month, and he should be allowed free quarters in his college. A

junior assistant should not be permitted to leave his appointment in the middle of a term, and in making appointments to the public services the Government should to this extent meet the convenience of the University.

10. There is a further point in connection with the recruitment of the staff of the new University on which we desire to lay special stress. It is highly desirable, especially at the outset, that a limited number of professors of eminence should be appointed on special terms. Their qualifications and attainments should be of the very highest; and it is so necessary to get men of the greatest distinction that it would, in our opinion, be justifiable to offer the large salaries necessary to secure their services. A sum of even Rs. 2,000 a month would not in our opinion be excessive, and we recognize that even for this amount men of the kind contemplated may not be easily procurable.

In general, men of about 40 years of age will be best, as younger men will not have had the necessary experience. At this age, too, successful men will have acquired habits of study and research which should withstand the effects of climate and environment. Young Englishmen, however brilliant, who, having only just finished their examinations and started original work, come out to India, find in many cases their enthusiasm weakened by the lack of an inspiring environment, and their difficulties exaggerated by the absence of the accustomed facilities and the help of older men. Under such circumstances a few men of exceptional calibre and strength of character will still manage to advance knowledge and earn a reputation, but the many, who might have been successful under more favourable conditions, will very soon drop original work altogether.

It is very desirable that these special professors should have already made names for themselves in Europe. If such is the case, their fame will become associated with the Dacca University, and will inspire confidence in its teaching. They will, alone and in conjunction with the junior members of the staff and the research students, publish memoirs in the various learned and scientific journals of Europe, and will thus secure a recognition for their adopted University which will prove a continual and powerful incentive to further effort. They will serve as a connecting link with Europe, and so assist in keeping the University in touch with other centres of learning and research. They will put life, energy and high character into all branches of the teaching of their subject. They will, in fact, teach the teachers—the most important branch, perhaps, of the work of a modern professor. They will also establish schools of research, in which investigation will be carried out under their influence and direction. Indeed, it is almost impossible to exaggerate the force which even one man of great ability and enthusiasm for his subject can exercise in a University. He literally inspires both his staff and his pupils, and it is difficult to conceive of a University which rightly fulfils its mission, unless it possesses some men on its teaching staff of this high quality. The value of such men is thoroughly well recognized in Europe, where every effort is made to attract and retain them.

In making these suggestions regarding the appointment of professors on special terms, we do not wish to imply that there are no professors of the high distinction we desire in India, or that recourse should necessarily be had in every case to England. On the contrary, any professors now in the country (whether European or Indian), who are found worthy of selection and are willing to come, should be the first to be chosen. Subject to this proviso, we believe that the professors of India will gain by the introduction of a few eminent scholars and scientists, whose presence and work will tend to enhance the dignity and influence of their profession. We also feel confident that so important an educational enterprise as the foundation of the Dacca University will be regarded as a peculiarly fitting occasion for the creation of the proposed appointments.

The professors appointed on special terms will take the place of an equal number of Indian Educational Service officers: endeavour might be made to obtain four of them, the average rate of emoluments being estimated at Rs. 1,800 a month.

Younger men of brilliant parts and great promise would also be of immense service to the new University; hence we suggest that in recruiting Indian Educational Service officers the initial salary of Rs. 500 should be exceeded in any case where this is found necessary. Similarly, in order that suitable men may be attracted by the offer of good salaries, the new officers of the Provincial Educational Service should not all be recruited in the lower grades; as the new posts will be distributed throughout the grades, this plan can be adopted without injury to officers already in the service.

11. The Principals of the Dacca, New, and Muhammadan Colleges will be members of the Indian Educational Service; the staff of the Jagannath College is at present composed entirely of Indian gentlemen, and we have therefore included the Principal in the Provincial Educational Service. The post of Principal of a college in the new University will be of such great responsibility and importance, that we consider it should carry a special allowance of Rs. 200 a month.

12. The division of the teaching staff for Arts among the colleges, suggested in the statement in paragraph 3, is designed so as to allow the various colleges to specialize to some extent in different directions. The Dacca College, as the principal college of the University, is allotted the largest staff; it will specialize in English, and, in conjunction with the New College, in mathematics and economics. The Jagannath College is given the strongest staff in Sanskrit and Philosophy, and the Muhammadan College will make a speciality of Arabic, Persian and Islamic studies. The Indian members of the staff of the Muhammadan College should, as far as possible, be Muhammadans. As already explained, the colleges should co-operate so as to avoid waste of teaching power.

One professor in each subject is shown in the statement as serving directly under the University; this will be the senior professor in charge of the seminar:

he will be assisted by professors from the colleges according to arrangements which will be made from time to time by the University.

In accordance with our general principle that the college will be the unit of University life and organization, every member of the teaching staff, even though employed directly under the University, should also be a member of one or other of the colleges, and as such should take part in its administration, discipline and social affairs. A professor or assistant who is not on the tutorial staff of any college may be permitted, subject to the approval of the college and of the University, to elect to which college he will belong.

13. It is not desirable definitely to prescribe the share of the work of instruction that should be performed by officers of different grades. The most advanced work must naturally be done by men with the highest qualifications, but at the same time the lower classes should on no account be neglected. Inspiring and stimulating teaching is needed from the outset, and the earlier stages of the student's career, during which his habits are formed, are in some respects the most important. As far as possible, therefore, the work of all classes should be distributed between the teachers of different grades, officers of higher grade taking a share in teaching junior classes, and junior assistants joining in the instruction of senior and even of honours students. The senior professor of a subject in any college or branch of the University should be generally responsible for its teaching, and the training of his assistants should be a recognized portion of his duties. It would be difficult to attach too great importance to a system whereby the methods of its ablest teachers may be made gradually to permeate the University and to raise the whole tone of its instruction.

14. We have so far dealt only with the grading of teachers according to the service to which they belong or the terms on which they are employed; it will also be necessary to classify them according to their academic status in the University. It is not very easy to suggest a suitable classification, and the following proposal is the result of much consideration:—

(1) Senior University Professors.
(2) University Professors.
(3) Professors.
(4) Assistant Professors and Demonstrators.
(5) Junior Assistants.

A "University Professor" may be defined as a professor who takes part in post-graduate instruction and on whom the title is conferred by the Chancellor; it would not be conferred on a research scholar or on a professor who gives only a short course or occasional lectures. A "Senior University Professor" will be the chief professor of a subject in the University; he should be appointed by the Chancellor from among the University Professors. The term "Professor," used without qualification, will denote the senior teacher of a subject in a college in which that subject is taught up to the B.A. stage. Other permanent members of the teaching staff may be styled "Junior Professors" or "Assistant Professors," according as they

are or are not of the status of an officer of the Provincial Educational Service. Demonstrators in science should take rank with assistant professors. The term "Junior Assistant" has already been explained. The arrangements suggested in this paragraph will require slight modification in their application to the science and professional and special departments of the University.

15. Professors of distinction should be invited from other parts of India or from Europe to deliver special courses of lectures. A professor coming to India to lecture during the cold weather might give lectures both in Calcutta and in Dacca, the expense to each University being thus reduced. Such lectures should, we consider, be regarded as a regular portion of the University system. The title of Honorary Professor, and the privileges of a member of the University staff, might be accorded to gentlemen distinguished in letters or science who consent to deliver occasional short courses with or without special remuneration.

CHAPTER XI.

Arts and Science : Accommodation and Equipment.

THE main items for consideration in this chapter are lecture theatres, class rooms, libraries, laboratories, examination halls and museums.

2. We have provided in the plans and estimates a large lecture theatre for each college and seven theatres specially adapted to science purposes in connection with the laboratories. All these theatres will be fitted with raised tiers of desk-benches, designed so as to enable a large audience to hear the lecturer and to see the demonstrations. The buildings to be assigned to the University include the Curzon Hall and a large room in the Senate House, both of which will be suitable for special lectures ; as these will also be used for other purposes they cannot be fitted with tiers of raised seats, and we have allowed in the estimates for moveable benches.

3. Class rooms in the colleges will be used for smaller lectures and for tutorial instruction. A rough estimate has been made of the requisite number of class rooms of different sizes, based (with a liberal margin) on the amount of lecture work and tutorial instruction which each college will give, and on the assumption that each room will be used for 25 hours a week. The calculation gives the following result : Dacca, 8 large sized rooms and 7 small sized rooms ; Jagannath, 7 large and 7 small ; New, 6 large and 5 small ; Muhammadan, 3 large and 4 small (instruction in Arabic and Persian being given in the Department of Islamic Studies). These rooms will be fitted simply with desks and forms, professor's desk and chair, and a blackboard. The accommodation for seminars has already been described. The most careful attention should be paid to the lighting of class rooms, both as regards its sufficiency and direction.

4. The University will require three types of libraries—

(*a*) the central University library ;
(*b*) seminar libraries ; and
(*c*) college libraries.

The University library should supply means for the promotion of advanced study and general culture. It should be a reference and not a lending library ; but professors should be allowed to take out books up to a very limited number, and

books may be taken out for seminar use during the day. It should not include ordinary college text-books other than standard works or works of special merit. On the other hand, it should include books on art, biographies, books of travel, etc., even though they are not required for University courses, a set of the best works of fiction, and the usual standard works of reference. Liberal provision should also be made for periodicals, scientific and otherwise. College libraries, while not relieving either the professor or the student of the necessity of keeping a small library of his own, should yet contain, besides standard works of general culture, ordinary works of reference which students taking either the honours or the pass course may wish to consult. Professors and students should be allowed, under suitable regulations, to take out books other than works of reference. The characteristics of seminar libraries and their relationship to the central library have been explained in Chapter VIII. The science portion of the University library will correspond both to the central library and to the seminar collection of books in arts subjects ; a small collection of books will also be required for each laboratory.

The Arts section of the University library will be accommodated in the main University building, now the Secretariat, at the southern end of the ground floor opposite the seminars, and will extend along the central portion as far as the first passage (*vide* plate No. 7). The books will be kept in two long rooms fitted with suitable shelves. There will be two large reading-rooms (each 101 feet × 34 feet) equipped with suitable fittings. The staff of the library should comprise a librarian in the Provincial Educational Service, 3 assistant librarians, and the subordinates enumerated in Appendix X. One end of each reading-room will be separated off by a counter, behind which should be accommodated the librarian or an assistant librarian.

An estimate of initial and recurring expenditure for the central library, the seminar libraries and the college libraries is given in Appendices IX and X. The Dacca and Jagannath Colleges already have libraries of their own.

5. The existing laboratories of the Dacca College could not be converted to the use of the University ; we are therefore transforming them into hostels and providing a complete scheme for new laboratories. Four two-storied buildings (see plates 9 to 13) will be erected for this purpose in the central site marked 12 in the general plan (plate No. 1) ; chemistry, physics and physiology will occupy the buildings marked (*a*), (*b*) and (*c*) respectively, and botany and zoology separate stories of that marked (*d*). A fifth laboratory for anatomy will be erected on site No. 15. The buildings proposed for the various laboratories are the result of the most careful consideration, and every effort has been made to produce a type which is economical, suitable to the climate of Lower Bengal, and in accordance with modern ideas of laboratory construction. In their general character they resemble the new laboratories recently erected at the Presidency College, Calcutta, which experience has already shown to be convenient and well ventilated and cool, both in the hot weather and the rains.

The general plan of these buildings consists of two parallel series of rooms running from east to west with a verandah along the whole length of the south side. All the rooms where light is of fundamental importance are arranged on the north side, which has no verandah, and are provided with large windows reaching to the ceilings and as broad and numerous as is consistent with the safety of the structure. Numerous openings or doors connect the north series of rooms with those on the south, so that the building can be thoroughly ventilated by the southerly wind that prevails during the hot weather and the rains and by the northerly wind in the cold weather. Certain rooms which are necessarily large and occupied by large classes extend throughout the whole breadth of the building (60 feet), and are consequently exceptionally well ventilated; in their case the north light is supplemented by lighting from the roof or from the west or east side. There is no central passage, and other passages have been eliminated as far as possible. This arrangement, while it largely increases the area available for work without any corresponding increase in the cost of construction, leads to no inconvenience in practice, since only the threatres and rooms for large classes need independent access.

The physical and chemical laboratories are provided each with two theatres, accommodating about 280 and 130 students, respectively, and the physiological, zoological and botanical laboratories each with one theatre accommodating about 130 students. Adjacent to the lecture table of each of the theatres are the preparation rooms. In the case of physics and chemistry the two theatres have a common preparation room so as to avoid duplication of demonstration apparatus and to facilitate the work of the assistant dealing with lecture experiments. The main lighting of the theatres is usually from the north, but where this is not the case the lecture tables are illuminated from above. Care has been taken to arrange the windows in such a manner that the theatres can be easily darkened for lantern demonstration. The spaces under the galleries of the theatres are so lighted as to be available for store accommodation. The flooring should be throughout of patent stone or some similar material, which should extend up the walls of the rooms to the height of one foot. The internal design of the buildings should, for the sake of economy, be of the simplest character.

Water will be obtained from the University reservoir. As the town possesses no gas supply, a Mansfield gas plant, sufficiently large to manufacture gas for all the laboratories, must be provided; the existing one in the neighbourhood of the Dacca College is too small for the purpose. Electric current will be furnished from the general source of electric supply.

We have carefully considered the plans proposed with a view to future developments as well as to present necessities. The Science Department of the University is likely to grow, and further claims may be made upon its resources by the addition of new colleges to the University and by the development of the professional departments. A generous, though not extravagant, estimate has been

made of the floor space to be allotted to those classes whose number is most likely to increase with the future growth of the University.

The total cost of the laboratories, including apparatus, equipment, gas, water and electricity, is estimated to be about 10½ lakhs. With this sum complete provision has been made for the teaching up to a high standard, of physics, chemistry, physiology, botany, zoology and anatomy, to the students of six Arts colleges and of the medical and engineering departments. This amount may appear small, if gauged by European or even Indian standards, but a very large economy results from the system of common laboratories, and we have no reason to fear that we have been niggardly in our proposals for this important department of the University.

The astronomical part of the course in mathematics will require for its efficient illustration a small observatory in which students may learn the use and adjustment of ordinary astronomical instruments. Provision has been made in the estimates for a simple building for this purpose.

6. The University and college buildings will contain a number of halls and large rooms amply sufficient for examination purposes, and no difficulty will be experienced from this point of view in conducting examinations on the general system indicated in Chapter IX. Four hundred desks and seats for use in examinations are available in the Dacca College, and an additional 300 should be provided.

7. A project for founding a museum at Dacca for the custody and exhibition of the historical and archæological treasures, in which the surrounding country is rich, has for some time past been advocated by prominent residents of the district, and has met with favourable consideration on the part of the Local Government. A temporary museum has been established in the Secretariat building for the custody of a number of valuable objects which have been collected during the past few years. Assurances have been given that, if suitable museum buildings are provided and a guarantee for careful management secured, many objects of great interest and importance, images, coins, pictures and documents, will be presented or lent to the museum. Such a museum would form a most valuable addition to the University, and we recommend that its management should be entrusted to a committee composed of members of the University and other persons interested in historical and archæological research.

There exist within the University site two buildings which may very appropriately be used for the purpose of an historical museum. Their history is of considerable interest. In 1765 Lieutenant Swinton came to Dacca as representative of the East India Company and took over charge of the Dewani from the then Naib-Nazim, Nawab Jasarat Khan, who vacated the palace in the fort and ultimately took up his residence in buildings erected for the purpose at Nimtali, where he had an extensive garden. Here he and his five successors lived in some state for nearly three-quarters of a century, watched by a detachment of the Company's sepoys who were quartered

opposite the eastern gateway. In the year 1843, when the last Naib-Nazim, Gaziuddin Hyder, died without children, the Company's Government took possession of the buildings, which were subsequently sold by auction. They were mostly pulled down by the purchasers; but two buildings—the Baradari, a hall in which the Naib-Nazims used to give parties, and the western gateway (surmounted by a fairly large room)—still remain. They are worth preserving, and, if they are put into good repair and the space round them cleared of encumbering rubbish and small buildings, they will make a very pleasing and suitable museum. They are situated immediately to the south of the Dacca College and convenient to the main avenue. Photographs of the gateway are given in plate No. 35.

8. In place of separate museums in connection with the botanical and zoological laboratories and a museum of geological specimens for engineering students, a large natural history museum, for the use both of the students and of the general public, should be established. It should be equipped with general collections as well as with collections specially designed for scientific study, and it should specialize in the flora and fauna of the neighbourhood. The Science Department of the University should be encouraged to make these local collections, which should become an important and useful feature of the museum. The senior University Professor of Zoology or Botany should be in charge of the museum, and a junior professor should be curator for each subject. A separate curator, of the status of a demonstrator, will be required for the general charge of the museum.

CHAPTER XII.

Arts and Science: Fees and Scholarships.

Fees.

THE fees payable to the University by students and graduates will comprise entrance or undergraduates' registration fees, tuition fees, examination fees, graduates' registration fees, and hostel fees. The last three items are dealt with in Chapters IX, XXIV and XIII, respectively. The entrance fee should be at the rate of Rs. 2 as in the Calcutta University. There remains for consideration the important subject of tuition fees.

2. The Dacca College levies fees from undergraduates at the rate of Rs. 6 a month, and the Jagannath College at the rates of Rs. 4 in the intermediate and Rs. 5 in the senior classes. The Dacca College fees are low, having regard to the character of the institution, and proposals for raising them were under consideration at the time that the present Committee was appointed. We suggest the following rates:—

Dacca and New Colleges—Rs. 6 in the junior and Rs. 7 in the senior classes;
Jagannath and Muhammadan Colleges—Rs. 4 in the junior and Rs. 5 in the senior classes.

This gives an all-round excess of Rs. 2 in the two colleges first named. The Jagannath College is intended for poorer students, and the cost of its staff, compared with the number of pupils, will be much smaller than in the other colleges. The second argument does not apply in the case of the Muhammadan College, in which the cost of the staff will be high, amounting to Rs. 13-14 a month per student, as compared with Rs. 8-12 in the Jagannath and Rs. 12-4 in the Dacca College. But the need for encouraging higher education among Muhammadans has been so fully recognized, and the poverty of many Muhammadan students who seek education is so great, that we are of opinion that fees in the Muhammadan College, in spite of its more expensive staff, should be kept at the low level of the Jagannath College. Moreover, in view of the inter-collegiate system, the argument from staff need not be pushed to extremes.

We consider that, having regard to the great advantages that will be offered in the new University and to the increased expenditure which they will entail, general

fees should be levied in addition to college fees; but that these supplementary fees should be fixed at modest rates which will not infringe the cardinal principle laid down by the Government of Bengal—that the scheme for the new University ought not to involve any such additional cost to the students as would discourage them from taking full advantage of its facilities. After mature consideration we recommend the following rates :—

	Rs.
Junior course—	
In Arts	Nil.
In Science	1
Senior course—	
In Arts	2
In Science	3

For post-graduate courses there will be no college fees, and we suggest that the University fee for these courses should be fixed at the rate of Rs. 10 for Arts and of Rs. 12 for Science.

Fee rates in special and professional colleges and departments are discussed in other chapters of this report, and an estimate of the annual income, which will be derived from fees of all descriptions, is given in Appendix VIII.

Scholarships.

3. We referred the question of scholarships to a sub-committee selected from among the members of the General Committee, and the following paragraphs are based on their suggestions.

4. *General Government Scholarships.*—Under the general scholarship system of the Government of Bengal, junior scholarships, tenable for the two years of the intermediate course are awarded on the results of the matriculation examination of the Calcutta University, and senior scholarships tenable for the remaining two years of the undergraduate course on the results of the intermediate examination. Since the Calcutta matriculation examination will serve Dacca as well as Calcutta, students desiring to enter the former University will have the same opportunity of gaining junior scholarships as students seeking admission to a college affiliated to the latter and no special arrangements need therefore be made.

5. A certain number of senior scholarships must be provided for students passing the intermediate examination of the Dacca University, and a general rule should be laid down that, subject to the limit of the annual grant made by the Government for the purpose, these and all other scholarships should be awarded by the Council under conditions which should be prescribed in the University regulations.

The rules of the late Government of Eastern Bengal and Assam make provision for the award of 33 senior Government scholarships (6 at Rs. 25 and 27 at Rs. 20). These scholarships were distributed among the five divisions of the province, and, subject to this distribution, were awarded to successful candidates in the intermediate examination of the Calcutta University in order of merit. We suggest that, without interfering with this provision, 20 senior scholarships should be awarded in the Dacca University, 5 at Rs. 25 and 15 at Rs. 20. They should be divided between the candidates for the intermediate examination in arts and in science proportionately to the number of candidates who pass, and they should be awarded to successful candidates in order of merit without territorial limitation. Senior scholarships gained in the Calcutta or Dacca University should be tenable in either University. Every senior scholar studying in the Dacca University should be required to read for honours.

6. Encouragement of post-graduate study will be an important feature of the Dacca University, and a reasonable number of scholarships, tenable for two years, should be provided to enable meritorious students to avail themselves of the opportunities that will be afforded by the seminar system to work for the M.A. degree. We suggest ten scholarships, each of the value of Rs. 30. They should be awarded annually by the Council on the recommendation of the General Board of Studies. The award should be confined to students who have taken their degree in the Dacca University, and they should be tenable only in that University: honours students should alone be eligible for them. The full number of scholarships should be awarded only in case the Council is satisfied that there are at least ten students who are of sufficient merit to be post-graduate scholars. A careful observance of this principle will cause the honour of holding post-graduate scholarships to be prized even more than the pecuniary advantage.

At the time of the award of post-graduate scholarships, the Council should elect a scholar to be the Dacca scholar of the year. He should be chosen as being the most distinguished student, and, unless there is a student who is markedly above the standard of the rest, the scholarship should remain unallotted. The Dacca scholar should receive an extra emolument of Rs. 10 a month.

7. We have already recommended, in Chapter VIII, the grant of a certain number of research scholarships: these will complete the graduate system of Government scholarships in the Arts and Science Departments. Proposals relating to scholarships in special and professional colleges and departments are made in the chapters concerned.

Fees are payable monthly in advance, and scholarships should be paid on the same system; delay in their payment, such as occurs not infrequently at present, involves great hardship upon students.

8. *Special Government Scholarships for Muhammadans and Backward Classes.*—The Government of Eastern Bengal and Assam granted 12 senior scholarships specially

for Muhammadans, 6 at Rs. 15 and 6 at Rs. 10 a month. These scholarships may be left for competition in colleges outside Dacca, separate arrangements being made for the new University. Muhammadan students will be eligible equally with all other students to compete for open scholarships, and any further encouragement should take the form of monthly stipends. The holders of these stipends should not be designated scholars, since to give them this title would detract from the academic honour attaching to the general University scholarships. We suggest that a sum of Rs. 300 a month should be allotted for distribution in this form to Muhammadan students in the senior classes of the Arts and Science Departments. The distribution, including the determination of the amount (which should not exceed Rs. 20 a month) of the stipend in each case, should be made by a special committee consisting of the Vice-Chancellor, the Principal of the Muhammadan College and the two nominated members of the governing body of that college. We do not make similar proposals for junior stipends because these must be granted on the results of an entrance examination common to the two Universities and cannot be calculated separately for Dacca.

One senior scholarship of Rs. 15 is provided for backward classes in the Eastern Bengal and Assam rules. We suggest that this scholarship should be retained for students reading in the Calcutta University, and that for the Dacca University a sum of Rs. 40 a month should be awarded by a special sub-committee composed of the Vice-Chancellor and two members appointed by the Council, in stipends of not more than Rs. 20 to deserving students of backward classes.

Three law scholarships of the value of Rs. 10 are provided for Muhammadans by the Eastern Bengal and Assam rules. Two of these should be awarded to graduates of the Dacca, and the remaining one to a graduate of the Calcutta, University. They should be tenable in either University.

9. *Free Studentships.*—In accordance with the general Government system, eight free studentships are allotted to the Dacca College. We consider that in the new University the grant of free studentships should be confined to the colleges specially intended for poorer students, and we propose 18 for each of the Jagannath and Muhammadan Colleges. Free studentships should be allotted by the governing bodies of the two colleges to meritorious and poor students; it should be open to them in any case to give half remission to two students instead of full remission to a single student. The free student system should be confined to undergraduate classes.

10. *Prizes.*—An annual sum of Rs. 500 should be allotted to the University for prizes. The Council should fix the number and value of prizes, and should award them on the recommendation of the General Board of Studies. They should be few in number in order that a University prize may be regarded as a great distinction.

11. *Endowment Scholarships, Prizes, etc.*—A list of the scholarships, prizes and medals, which have been endowed by private munificence in connection with the

Dacca College, is given on pages 933-934 of Part II of the Calendar of the Calcutta University for the year 1912. The conditions attached to these benefactions should be revised to suit the new conditions, after consultation with the donors or their representatives.

Three senior scholarships of the aggregate value of Rs. 42 a month in each year have been allotted to Eastern Bengal and Sylhet from the Mohsin Fund. We recommend that in lieu of three scholarships a sum of Rs. 84 a month should be distributed in the form of stipends to Muhammadan students of the senior classes by the same committee that will distribute the Government Muhammadan stipends. The Director of Public Instruction, in making the annual allotment to colleges from the Mohsin Fund for the maintenance of poor students, should assign a lump sum to the Dacca University, which should be devoted mainly to stipends for junior students.

12. Our Muhammadan colleagues consider that the special facilities provided for Muhammadan students in the shape of scholarships, stipends and free studentships are insufficient for the requirements of the Muhammadan community. But any proposals to extend the eleemosynary system beyond the limits we have suggested would raise general questions of great importance common to the whole province, and as such would appear to be beyond the scope of our functions.

CHAPTER XIII.

Residential System.

In spite of the growing recognition of the value of the residential system, the actual accommodation hitherto provided in Indian Universities is small compared with their requirements, and the new University will not fulfil its purpose unless it makes so great an advance as to amount to a change in kind rather than in degree. We consider that all students not living with parents or duly authorized guardians should reside in college, and we have included in our plans and estimates accommodation sufficient to enable effect to be given to this principle.

2. No students' messes or non-collegiate hostels should be permitted to exist in connection with the new University; even the permission to live with an authorized guardian must be carefully regulated and controlled, since laxity in this respect may easily defeat the object of the residential system. A student should not be permitted to join a college and become a member of the University until the question of his residence has been settled. Residence except in his own home should be allowed only on special conditions: the student must be expressly confided to the care of the person with whom he is to reside; the latter, having been interviewed by the college authorities and approved as a fit and suitable guardian, must formally assume charge and responsibility. In admitting students preference should be given up to the limit of accommodation to those who intend to reside in college. Fears have been entertained that the expense of residing in hostels will be so great as to deter students of average means from entering the University. If the proposals made in the present chapter commend themselves to Government, these fears will prove groundless, and none but the very poorest will experience any difficulty owing to the expense of hostel life. For this class scholarships and free studentships should be provided, and private liberality should be called into play.

3. The following statement compares the number of students, including medical students, in each of the four Arts colleges with the proposed residential accommodation:

	Total.	In residence.
Dacca College	660	540
New College	540	400
Jagannath College	540	340
Muhammadan College	320	220
	2,060	1,500

Students of the Islamic Studies Department have not been entered in the above statement. Residence in the Muhammadan College will be open to them as freely as to students of arts, science and medicine, but they will very often belong to a somewhat different and poorer class. Poor madrasah students are not infrequently housed and supported by charitable persons under the "jagir" system, and consequently many will not be able to live in college. It will be the duty of the authorities of the Muhammadan College to see that those who live, in jagirs or otherwise, outside the college, are properly looked after by responsible persons. For the Jagannath College a comparatively large non-residential margin has been left; should it prove possible to make this margin narrower, further hostel accommodation should be provided. We attach the utmost importance to the principle that as large a proportion of students as possible should be in residence, since it is only on such students that the full benefits of University life can be conferred; in each college additional hostel accommodation should from time to time be provided to the fullest extent to which it can be utilized. Arrangements for providing the additional accommodation should be flexible and should admit of the grouping under one college of hostels of different types. Thus, in the opinion of many, the various missionary agencies have found their most valuable sphere of work in connection with hostels, and there is no reason why a missionary body should not conduct a hostel under the auspices and authority of a college. In the same way new hostels may be established for special classes or may be open to all. Unless such variety is possible, opportunity for meeting the growing demands which the widening tendencies of Indian thought are creatin will not exist, or at all events will not fully exist, in the future.

4. We have adopted the small dormitory system for college hostels. In designing new buildings we have provided rooms to contain four students—the arrangement obtaining in the Dacca College—and in adapting existing buildings we have kept as near as possible to the same figure. The dormitory room in the ordinary course is used for private study, and it should not contain more than a few students. Each college will have one or more common-rooms for the use of both day scholars and resident students. Furniture should be provided on a modest scale, and we have framed an estimate (*vide* Appendix IX) based on that supplied in the Dacca College. Some members of the teaching staff must reside in each hostel and be responsible for its management. Provision has been made for quarters for such superintendents, European and Indian, married and bachelor, according to the requirements of each hostel. Details are shown in the plans of the various colleges. It is essential for the maintenance of discipline that hostels should be locked up at night: they have therefore either been located on the second storey, or have been provided with barred windows and an entrance which may be closed.

Dining rooms and kitchens sufficient for the whole number of resident students have been provided for each college. The dining rooms for Hindus are designed so that students may sit in rows on the floor in accordance with existing custom. Light partitions may be erected where necessary to separate different castes. A strip of

ground round both dining room and kitchen should be cemented, and every precaution should be taken to secure cleanliness. Muhammadan students are accustomed to sit at a table, and a large dining hall, sufficient to accommodate all the students, is provided for the Muhammadan College somewhat on the model of a college hall in an English University. There will be rows of long tables for students, a high table for professors at one end of the room, and a table for graduate students at the other.

5. It will greatly benefit college and University life if young graduates studying for the Master's degree or engaged in research work reside in college and take part in its affairs. We have therefore made provision for a certain number of rooms for graduates and junior assistants in all colleges. Post-graduate students may take their meals with the others; but separate messing accommodation should, where possible, be arranged for junior assistants. Residence in college should be optional for all graduates; but where a junior assistant is required to take part in the general care of the students, it may be made a condition of his appointment that he should live in college.

6. Convenient arrangements cannot be made to receive Namasudras and others of the lower castes in the general hostels, and it is to be feared that this difficulty sometimes stands in the way of their receiving University education. We therefore propose that an extra hostel should be attached to the Dacca College, and that it should be used, if this be found desirable, for the accommodation of a special caste or castes such as the Namasudras. A large building to the north-east of Government House (No. 23 on the general plan) can be readily converted into a well-equipped hostel. It will contain 32 rooms for students; most of these will accommodate one student only, but some are larger and may be used for young graduates, or for two or more students, should extra accommodation be needed. Two dining rooms, a common-room, three preparation rooms, and a library are also provided. Quarters should be erected for a superintendent, who should be a professor of the Dacca College, to the east of the main building.

7. Each college will be responsible for the management of its own residential arrangements and for the enforcement of discipline in its hostels. General regulations dealing with matters of cardinal importance in which uniformity is desirable should be made by the University, and subject to these, each college should make its own rules.

8. No rent is at present charged to students for hostel accommodation in either the Dacca or the Jagannath College. With a view to afford every encouragement to the adoption of the residential system in the new University we recommend that the existing Dacca practice should be continued, and that students should be permitted to live in college without payment of rent. This concession is a great one; but we hope that the Government will be prepared to grant it, in view especially of the caution, contained in their Resolution appointing the present committee, against increasing the cost of education to students.

A charge should be made towards the expenditure incurred in hostels for servants, upkeep of furniture and of kitchen and dining utensils, lighting, water, sanitary arrangements and medical attendance. A monthly fee of Rs. 2-8, payable throughout the year, will be reasonable.

9. In the Dacca College students manage their own messing. The superintendent of the hostel appoints a messing clerk and a staff of cooks and servants; and every month two of their number are appointed by the students to supervise the purchase, cooking and serving of the food. At the end of the month the aggregate cost of servants, food, etc., is divided among the members of the mess. This system, which has been found to work well in practice, should be retained. Greater difficulty is experienced, especially in the case of poor students, in providing the light refreshment which is taken on rising and at about four o'clock. Some improvement might be effected in this respect by establishing a respectable person as a retail purveyor in a shop in the University precincts, who would send round men to the colleges to sell various kinds of light food. We suggest the acquisition for this purpose, and also for the accommodation of a bookseller, of two shops on site No. 8. It will be necessary to make better provision than exists at present for the supply of good milk to students at a reasonable price. The establishment of a University market has been suggested; but we think that it will be better to utilize existing markets, which should be improved and watched with some vigilance. A municipal market within easy reach of the University would be of great advantage.

10. It will be incumbent on the University to provide adequate medical attendance and relief for the very large number of students who will be in residence. The Ramna dispensary (No. 14 on the general plan), which is no longer required for the purpose for which it was built, will make a very convenient hospital for the University. The rooms will accommodate 14 patients, leaving one part of the building to serve as a dispensary. The compound should be extended up to the railway line, and a small ward for infectious cases, two cook-houses and quarters for servants will be built. The hospital will be in the immediate charge of a Sub-Assistant Surgeon, for whom quarters already exist. Apart from the central dispensary a small stock of medicines, under the charge of a compounder, should be kept in each of the principal college hostels.

The University Professor of Physical Education (*see* Chapter XV) will be in general charge of the arrangements for medical relief. He will be helped by two Assistant Surgeons, who will visit the hostels daily, and by the Sub-Assistant Surgeon in charge of the hospital. The Assistant Surgeons may be allowed private practice and one of them might also be appointed to lecture in materia medica to the medical students of the University. For estimates of initial and recurring cost, see Appendices IX and X.

11. In order that a University may become a residential institution, teachers as well as students must live within it and find there the interest and occupation of

their days. At present some professors after they leave the lecture room take little interest in their college and pay little attention to their students. The system—the lack of all that makes for an inspiring corporate life—not the teachers, is to blame for this state of affairs. We propose that a large proportion of the teachers should live within the precincts of the new University; that every encouragement should be given to them to associate with one another and to take a common interest in University affairs; and that their duties should extend to all aspects of student life.

12. There are 15 houses built for Europeans within the area proposed for the University, a few of which are large enough for two families. Including the 11 sets of quarters which exist or are to be constructed in connection with college hostels, and the houses to be built for the Principal and one of the professors of the College for the well-to-do Classes, the total provision will amount to 19 sets of married and 13 sets of unmarried quarters. This will suffice for the accommodation of the Indian Educational Service and other European officers, who will number 38, including all departments of instruction and administration. It is not necessary to provide for the full number, since some officers will always be on leave, and some whose families are away will prefer to live together rather than to maintain separate establishments. We have not attempted to assign houses to the various colleges of the University, since the arrangement must vary according to the convenience of the moment. All matters connected with the allotment of houses should be settled by the Vice-Chancellor, and officers will be expected to live in the houses which are apportioned to them.

Six of the houses are at present occupied during a portion of the year by Members of the Council and officers of the head-quarters staff of the Government of Bengal. If they are converted to the use of the University, other houses must be provided for these officials. In any event it will be necessary to build, since there are not sufficient houses both for the University and the Government; this being so, we trust that the Government will give full consideration to the paramount importance of housing the staff in the immediate neighbourhood of the colleges, and will permit the existing buildings to be used by the University, constructing new residences for their own use. The area known as the Park, which lies east of the Ramna between the northern section of the civil station and the new Government House, would appear to be the most appropriate site for these residences. We may point out that if this scheme were not adopted, the advantages which are connected with the grouping of the University buildings in a single and well-defined area would be lost, and that future extensions would have to be carried out to the disadvantage equally of the University and of the civil station.

13. Provision must also be made for residence within the University of a considerable proportion of the Indian members of the staff. It is not necessary to provide for all of them, as many would prefer to live in the town. We consider that it will suffice for the present, if quarters are made available for 40 officers

of the Provincial Educational Service and 15 of lower grade. This provision has been made in the plans and estimates in the form of quarters attached to hostels and of existing and new buildings. Here again it must be taken as a condition of service that an officer must reside in a house that has been allotted to him.

Seven houses are reserved for European subordinates, including officers of the Engineering College and school and of the administrative staff; of these five have already been built in a double row north of the compound of the Engineering College.

14. To the officers who reside in the University duties will be assigned which will take up much of their time and energy. In addition to a full share of class work they will be required to look after the sports and social life of the students, they will be expected to exercise a more detailed supervision over them, and they will be able to meet them in more intimate relationship than has hitherto been practicable. These conditions may involve work at any hour of the day, and will render the life of a professor more arduous than has hitherto been the rule. This new burden should be accompanied by a new privilege; and the most appropriate recognition will, in our opinion, be the extension of the present rules regarding free quarters to cover all members of the staff who reside within the University. We therefore strongly recommend that no rent should be charged for the residences provided in accordance with the proposals made in this chapter.

CHAPTER XIV.

Discipline.

THE Indian Universities Commission very truly observed that Indian students are rarely guilty of disorder, but that they need close and friendly supervision. The residential arrangements described in the last chapter will greatly facilitate the growth of an intimate relationship between teachers and students and will permit of a regularly organized tutorial system. We suggest that arrangements be made on the following general lines :—

(1) A house tutor should be appointed by the Principal of the college for every 50 undergraduates in residence.

(2) As far as possible, a tutor should have the students residing in a compact block of rooms under his charge.

(3) It will be the duty of the tutor so to guide his students that they will derive the fullest benefit of which they are capable, from the opportunities which the University will afford. He must therefore know them individually and make himself readily accessible to them, taking an interest in their studies, sports and other pursuits.

(4) The tutor should visit the rooms of his students at regular intervals, and should appoint a time and place at which any of his students may see him.

(5) All applications regarding leave, studies, etc., should be presented to the tutor in the first instance.

(6) A register should be kept by the tutor showing the occasions on which he has visited his students, and on which they have come to him : this register should be inspected by the Principal.

(7) The tutor should keep a terminal register regarding his students, in which particulars such as the following should be entered :—

(*a*) attendance at lectures (posted by the clerk from the registers),
(*b*) college examination results,
(*c*) conduct in hostel,
(*d*) health,
(*e*) participation in games,
(*f*) punishments,
(*g*) reports of professors,
(*h*) remarks of the tutor.

A terminal report based on these particulars should be sent to parents and guardians. These reports will be prepared in the college office, and should be submitted by the tutor to the Principal who will remark on them in any case in which he thinks fit.

The tutorial system can be carried out much more easily and efficiently for resident students than for those who live in the town; moreover all professors have not the faculties which would render them suitable for this tutorial work, and we doubt whether the staff of the colleges will allow of the extension of the scheme to non-resident students. If, however, the authorities of any college find themselves able to arrange for such an extension, the experiment should be tried. In the case of non-resident students, a terminal report should in any event be prepared embodying such of the above items as the conditions will allow.

2. The responsibility for the maintenance of discipline within a college should rest primarily with the Principal, whose orders should be final except in the case of an offence involving rustication beyond the end of the term or expulsion. The members of the committee differ in their views as to the procedure to be followed in dealing with such cases. Whilst the majority consider that a reference should be made to the governing body of the college, which should pass final orders upon it, a strong minority think that the punishment should be inflicted by the Principal, whose decision should be subject to confirmation by the Vice-Chancellor. University teachers will exercise ordinary powers of discipline in class rooms and laboratories, and should report any grave case of misconduct to the Principal of the college. The general control of conduct in the University outside colleges, class rooms and laboratories should be exercised by the Warden, the executive assistant of the Vice-Chancellor. All complaints of misconduct by or towards students should be made to him, and he should have power to punish students by fine, informing the authorities of the college in each case. Should the offence be a grave one, demanding a heavier punishment, the offender should be reported to the college authorities who should deal with him as they think fit. The Warden should also keep a careful watch upon the behaviour of students and should try by all means in his power to maintain a high standard of politeness and orderly conduct amongst members of the University.

3. We consider that the following general principles should be observed with regard to attendance at lectures:—

(1) attendance at lectures should be compulsory;

(2) wilful failure on the part of a student to attend should be dealt with by his college as a breach of discipline;

(3) persistent absence without leave should entail forfeiture of permission to sit for the University examination;

(4) college authorities should not grant leave of absence either from lectures or from the University without due cause and careful enquiry;

(5) if the number of absences, including authorized leave, amounts to over 40 per cent., the student should be debarred from presenting himself at the examination, since he will not have received a due measure of University training.

4. The wearing of cap and gown or other distinctive University dress is an aid to discipline and an encouragement to corporate feeling. The dress of Hindu students does not lend itself readily to distinctive treatment, and it does not appear to be practicable to prescribe any kind of University uniform for undergraduates. The sub-committee for the Muhammadan College recommend that a uniform dress should be prescribed for the members of that college; in their case no special obstacle exists, and we think that the suggestion is a good one. Graduates in residence should wear their gowns at all University functions and for lectures. The University and each of the colleges should have its own arms, motto and colours, and a uniform system of colours for the various sports should obtain throughout the colleges.

5. We do not find it possible to lay down any general rules or principles regarding religious instruction and observance in the University. If a spontaneous demand arises on the part of any body of parents, the University authorities will doubtless give it every consideration. In the Muhammadan College the question is much simpler, and the great desire of the Muhammadan community that due attention should be paid to religion can, we think, be satisfied without any infringement of the cardinal principle of religious neutrality. The sub-committee for the Muhammadan College made certain recommendations on this subject which may, in our opinion, be accepted. They are as follows:—

"Prayer and religious observance and instruction should be compulsory for those boys whose parents so wish, under regulations to be made by the governing body of the college. A student seeking admission to the college should submit a statement by his parent or guardian stating whether it is desired that he should receive religious instruction, attend prayers, and follow observances.

"Subject to the approval of the Principal, the governing body should arrange for religious instruction to be given by the staff, the staff including the professors of the Islamic Studies Department.

"Subject to the approval of the Principal, the governing body should appoint a member of the staff, who is willing to undertake the duty, to be the Dean of the college for the purpose of regulating religious instruction and observances.

"It will be for the governing body to determine how far these regulations should be made applicable to non-resident students."

No Muhammadan member of the staff should be required to give religious instruction or to supervise religious observance unless he so wishes; as, however, a considerable portion of the staff will be engaged in the teaching of theology and religion, no difficulty is likely to be experienced in securing voluntary instructors.

CHAPTER XV.

Physical Training.

A RESIDENTIAL University should so develop the body, the intellect and the character of its students that they may become men in the fullest sense of the word, and the athletic aspect of University life is thus an element of primary importance. The University of Dacca, by reason of its compactness and the ample space available for its use, will be in a very favourable position to organize a regular system of physical training adapted to the needs, and designed to improve the physique, of the general body of students. The sub-committee on Students' Affairs have, in consultation with Dr. J. H. Gray, Physical Director of the Y. M. C. A., Calcutta, and adviser to the Government of Bengal on questions connected with physical education, worked out a scheme well suited to local conditions, which we have adopted without important modification.

The scheme is based upon the system in force in the leading American Universities, combined with the University and collegiate athletic organization characteristic of Oxford and Cambridge. Every student will receive individual care and physical training appropriate to his needs and constitution, and at the same time every encouragement will be given to outdoor games and sports, and to the healthy rivalry of inter-collegiate and University competitions.

2. At the head of the department of physical education will be a University professor, a medical officer with special training in physical development. Dr. Gray believes that a qualified officer could be obtained on Indian Educational Service terms. If no one with the requisite training or experience can be procured from England, it may be necessary at the outset to have recourse to America for an officer similar to those who preside over physical education in Yale, Harvard and other American Universities.

3. The first duty of the department will be the medical examination of students on becoming members of the University. The examination will be compulsory for all freshmen, and will be carried out by the University professor at the

beginning of each year. Systematic records, which will be used both to regulate training and for statistical purposes, will be kept of the measurements of students and of the other results of this examination. Many students suffer from ailments which, if taken in time, can be easily cured, but which, if neglected, tend to become chronic. For such the medical examination will be followed by suitable treatment by the University medical staff. After the first year medical examination will be voluntary, but it is believed that many students in order to test their development will desire to be examined periodically.

4. The training of the student will have a theoretical and a practical side. The theoretical instruction will be simple, the rudiments of physiology and anatomy leading to an elementary knowledge of the hygiene of the individual and community, and some simple demonstration of "first aid". The course will comprise one lecture a week during the first two years, and a paper will be set on the subject at the intermediate examination. Failure to pass in this paper will not entail failure in the examination, but the student will be required to attend further courses and again to appear at the examination, which he must pass before taking his degree, at the end of the third or fourth year. The University professor will deliver the lectures, the students of each year being divided into two sections: he will thus give four lectures a week.

5. Every resident student will be required, as the basis of his practical training, to take at least one hour of approved physical exercise three times a week. At the outset it may not be possible to extend this compulsory principle to non-resident students. Both resident and non-resident students will also be encouraged to take an active part in college and University athletic life.

At the initial medical examination students will be divided into the physically fit and unfit. Special exercises, of a therapeutic kind, will be prescribed for the latter class and will be continued, without other form of physical exercise unless specially permitted, until the student is cured and passes into the main classes of the physically fit. For other students the compulsory course of the first year will consist entirely of physical exercises of an educative and corrective character. In addition they will be encouraged to take a voluntary part in sports and games. After the first year the student may select, for his three hours of compulsory training, any outdoor or indoor exercise provided by the University or by his college.

The colleges will be responsible to the University for seeing that all their resident students take these compulsory periods of exercise. One member of the college staff, who takes an interest in athletics, will supervise the organization of the college games and will control the compulsory system, which may be based on reports presented by the students themselves, each student being provided with a weekly diary card on which to enter particulars of his daily exercise: at the end of the week he will deposit this card at the college office.

6. Provision will be made for the following sports and pastimes :—

INDOOR.

Exercises, such as Indian clubs.	Single stick, etc. Gymnastics.

OUTDOOR.

Cricket.	Fives.	Cross-country running.
Football.	Badminton.	Swimming.
Hockey.	Athletic sports.	Riding.
Tennis.		

7. Indoor exercises will centre in the gymnasium, in which will also be situated the office of the University professor and his examination room. The gymnasium (see plate No. 34) will comprise a central hall of the dimensions 120 feet × 60 feet with a verandah along two sides 15 feet in width, and, along the other sides, the entrance hall, the offices of the professor, the examination room, store rooms, gallery, etc. Facilities for washing and changing will be provided. The gymnastic apparatus, as is the rule in modern gymnasia, will be easily removable, in order that the whole floor space may be available for exercises. The educative, corrective, and therapeutic exercises will be under the general control of the University professor. A gymnastic instructor with assistants will be in immediate charge of the gymnasium. An open space will be available outside the gymnasium on which, when the weather permits, physical exercises may take place.

8. Each college will have its own playing-fields, and the various forms of outdoor athletics will be organized on the basis of college clubs, competitions being arranged between various teams within the college. Each club will select a team to represent the college in inter-collegiate and other matches. The professor responsible for the athletics of the college will work in conjunction with the college clubs. A college athletic association will be formed, of which the professor in charge of games will be the president, and the members will be the captains of the college games. A University Athletic Association will be required for the control of University grounds and equipment, for the management of inter-collegiate and University matches, and for the selection of University teams. The Warden, the University professor of physical education, the college professors responsible for games, and the captains of the University and college teams will be members, and the Principal of a college should be appointed by the Vice-Chancellor to act as president.

For cricket, football and hockey a University and fifteen college grounds will be provided in the large site, shown on the ground plan of the University and in plate No. 2: if necessary, other grounds may be added on the adjacent land to the north. A pavilion will be erected for the University, and several sheds for changing and for storing implements near the college grounds. There are numerous sites for tennis and badminton courts round all the colleges, and such courts may be made to any extent desired. Although opportunities for badminton will be provided by way of relaxation, it should not be regarded as a recognised University or college sport. Several courts for fives will be built and will be under the control of the University Athletic Association. A running track for athletic sports will surround the University cricket and football ground. It will be managed by the University Athletic Association but will also be available to colleges for training and for competitions. Inter-collegiate competitions in athletic sports will be encouraged. College clubs will organize cross-country runs. Tanks will be improved to make them suitable for swimming and the large tanks in the compounds of the Dacca and Muhammadan colleges will be fitted with diving appliances, etc.; swimming and water-polo will be encouraged. Stabling and a riding master and a riding school will be provided in connection with the College for the well-to-do Classes, and will also be used for the instruction of engineering students and for other University purposes.

9. The University professor of physical education will control the medical and gymnastic staff. A superintendent for the gymnasium may be recruited from the Army Gymnasium Department on a salary of Rs. 300 a month and free quarters; and two Indian officers on Rs. 100 a month may be appointed to assist him. The upkeep of the playing-fields and other outdoor equipment, including the swimming tanks, will be a charge of the Warden, assisted by a groundman on Rs. 300 a month, with a subordinate on Rs. 100 and a staff of *malis*, etc. We are advised that the grounds may be maintained most economically and efficiently by the employment of motor lawn-mowers fitted with rollers, for two of which we are allowing in the estimates.

10. The playing-fields, gymnasium, etc., should be maintained by the University: other expenditure on games should be met by fees. Every member of the University should be required to contribute eight annas a month payable, like other fees, throughout the year. This subscription, which will yield an income of about Rs. 1,500 a month, will be distributed between the University and the various colleges by the University Athletic Association.

CHAPTER XVI.

Social Life.

THE lines on which the first teaching and residential University in India will develop cannot be precisely foretold, and this is particularly true in the matter of social life. The University must be left gradually to work out its own social system. The utmost that can be done at present is to provide opportunities for friendly intercourse and to encourage common intellectual pursuits.

2. The Vice-Chancellor should be the head and centre of the social life of the University and should be provided with a residence and a sumptuary allowance which will enable him to perform this duty in a suitable fashion. A club for professors will be required, with a house containing a library and reading room and accommodation for other forms of recreation, a garden with lawn tennis courts, etc., and arrangements for light refreshments. The site and building should be provided by Government and a grant should be made towards the initial equipment, but the club should be maintained by the subscriptions of its members. All members of the teaching and administrative staff should belong to the club; they may be left to settle among themselves the amount of their subscriptions.

3. A Union on the lines of those at Oxford and Cambridge should be established as a general social centre for student life. The building may consist of three main rooms and a wide verandah. One room will be a lending library and reading room, one room will be used for general social purposes and for meetings of literary and other societies, and the third will be fitted for indoor games. A retail vendor's kiosk will supply light refreshments. A debating society should be formed as part of the Union, and debates may be held in the Curzon Hall. Due care should be taken that the subject and tone of debates are not unsuitable. The Curzon Hall may also be used for dramatic entertainments, given either by a University Amateur Dramatic Club or by college clubs, and our estimates allow for the provision of a moveable stage. Membership of the Union should be compulsory on students and staff; a fee of two annas a month, payable throughout the year, and supplemented by a Government grant of Rs. 600 a year, should suffice for the maintenance of the institution. The members of the Union should elect their own committee and office-bearers, and the President of the Union should also preside at debates.

4. It may be expected that students will form themselves into various social, literary and scientific associations both in their colleges and in the University at large. Such societies will play an important part in the corporate life of the University and should be given full encouragement. They should in every case receive the sanction of the University or college authorities, as the case may be, and class rooms and other suitable accommodation may be made available for their use.

5. It is very desirable that a close connection should be maintained between the University and its old students. A formal gathering should be held every year, which should be made the occasion of matches between teams of old students and University teams. Colleges might offer accommodation, in so far as it can be made available, to their past members.

CHAPTER XVII.

College for Women.

REPEATED requests having been made by the parents and guardians of pupils of the Eden High School for Girls that college classes should be opened for women students, the question was referred in March last to the Female Education Committee of the late Government of Eastern Bengal and Assam. The committee favoured the establishment of a college at Dacca, which, instead of repeating the features of the colleges for women which already exist in India, should work on somewhat novel lines. The curriculum of a women's college should, they considered, aim at the production of useful and practical members of society by imparting to the students a knowledge of themselves and of their duties in life; an insight into those branches of study which will render their leisure hours profitable and pleasurable; and the capacity to take an intelligent interest in the careers and business of their husbands, sons and brothers.

The present time is particularly favourable for giving effect to the suggestion of the Female Education Committee, because of the facilities which will be afforded by the new University, and by reason of the decision which has been taken to erect new buildings for the Eden School, which is at present accommodated in hired houses. A site (No. 1 on the general plan) is available, close to the town and in convenient but not too great, proximity to the general buildings of the University.

2. We submitted the question to a sub-committee, including ladies with special knowledge and experience of the instruction of Indian girls, and they have expressed the opinion that a college for women in the Dacca University would be of great assistance to the advancement of women's education. The sub-committee are in general accord with the opinion of the Female Education Committee as to the proper scope of the college; and they have suggested the inclusion in the curriculum of a course in domestic economy, hygiene, nursing and the training of children, and also of science subjects, both for the sake of general students and for girls who propose to take up the study of medicine. The following paragraphs embody their recommendations for carrying out this general scheme.

Admission of Students.

3. The number of students will at first be small, but is likely to increase in course of time. For the present, accommodation may be provided for 40 students, *i.e.*, for about 12 annual admissions. Some Anglo-Indian girls may wish, and should be permitted, to avail themselves of the advantages afforded by the new college ; it will not at first be necessary to make any special provision for them : if one or two such girls join they may be accommodated with the mistresses ; if they seek admission in greater numbers special quarters may be built. The entrance qualification should be the matriculation examination of any Indian University or its equivalent ; and the ordinary rules as to age-limit, etc., should be observed. The high schools at Dacca, Mymensingh and Chittagong will be the main feeders of the college, but students are also likely to come from other parts of the country.

College and University Instruction.

4. A very important preliminary point must be settled before considering courses of study and other details : how far the college should be self-contained and how far its students should be permitted to take advantage of the general arrangements for University instruction. Many parents will prefer that their daughters should receive their entire education within the college, and that they should not attend University or inter-collegiate lectures or make use of the common science laboratories. A full University course, specially adapted to women's tastes and needs, should therefore be provided in the college. The choice of subjects that can be offered must necessarily be limited, since the expense of providing numerous alternatives for 40 students would be prohibitive. So also would be the provision of honours, and still more so of M.A. instruction. Where students desire higher teaching than the college can provide, or to take up subjects which are not included in the college curriculum, they may, if their parents desire it, be allowed to attend general University lectures, and suitable arrangements should be made by the college for chaperoning them. To such students all the University courses will be open. The college should give instruction in science up to the I. Sc. stage ; girls going beyond this must work in the University laboratories.

The services of the general staff of the University may be utilized in another way, by making suitable allowances to professors for giving extra courses of lectures in the college for women. The lecture rooms of the college must be so arranged that professors of the University may have access to them without entering other parts of the building.

Courses of Study.

5. The general University regulations regarding length of courses, attendance at lectures, and examinations should be followed in the college for women. The main features of the University courses should also be retained, for instance, the same number of subjects, compulsory and optional, should be studied, and the same standard of attainment should be required. But in the choice of subjects considerable difference will be desirable, and stress should be laid on subjects specially suitable for women.

Instruction in the following subjects may be provided in the college :—

Junior and senior courses ...
(1) English.
(2) Bengali (and Urdu, if required).
(3) History.
(4) Sanskrit.
(5) Mathematics.
(6) Domestic subjects.

Junior course only ...
(7) Chemistry.
(8) Physics.
(9) Botany.
(10) Zoology.

A scientific and practical grounding in the domestic arts will not only make a woman more efficient in the performance of her duties, but will render her whole life more interesting. The ordinary routine of domestic work assumes a new and more attractive aspect when the principles underlying its daily operations are understood and can be applied to save labour, to afford comfort, and to confer pleasure. The study of domestic subjects, if pursued intelligently and with abundant practical illustration, is also a very popular subject with girls, affording relief from purely theoretical studies and an invaluable training of the mind, hand and eye. The instruction which it is proposed to give in child study and the training of children should be one of the most valuable parts of the course.

The four scientific subjects are included primarily for the sake of girls who wish to be trained for the medical profession. Our sub-committee very strongly recommend that the Dacca University should assist in the great movement that has been initiated to train Indian ladies for the medical profession, by providing in its women's college a complete preliminary course in the general science subjects which must be studied by all medical students. The opportunity to follow such a course in the comfortable and appropriate environment of a women's college is likely to afford a great inducement to Bengali girls to turn their attention to medical studies. After completing the proposed scientific course they will be fully equipped to take up professional subjects, and they should then prove valuable recruits for

the medical college for women which is to be established at Delhi. The arrangements for scientific instruction made for medical students will also be available for girls taking a general course.

Art and music would both be of great educational value in a college for women such as we contemplate. We have not however included them in the general course, because until the college grows in size, the great expense of providing instruction of a University standard in these subjects could hardly be justified. If local arrangements could be made for this purpose, some instruction in music might be given outside the course to students paying a special fee. Also, if the staff of the school of design which is to be incorporated in the Industrial Institute, could arrange to give regular instruction in the women's college, then art might be included among the alternative subjects. either in the junior or in the senior, or in both of these courses.

The vernacular and English training classes which are attached to the Eden School are of school and not of college grade, and should therefore remain on the school side of the institution. If a woman student wishes to take a University course in teaching, it will be necessary for her to attend lectures at the Teachers' College in the city, arrangements being made in the Eden School for her practical work.

6. The following curriculum is proposed for the junior course :—

(1) English.
(2) Bengali (or Urdu).
(3) Domestic subjects.
(4) } Any two of the following :—
(5) }

(*a*) History.	(*d*) Either Physics, Chemistry, Botany or Zoology.
(*b*) Mathematics.	
(*c*) Sanskrit.	

Medical students of the women's college will take the same preliminary scientific course as medical students of the University, including English, physics, chemistry, botany and zoology. In the rare case of a girl who wishes to take the B.Sc., instruction can be provided in the college for the ordinary I.Sc. course in English, vernacular language, mathematics, physics, and chemistry.

The senior course will comprise English (compulsory) for two years, Bengali or Urdu (compulsory) for one year, and two other subjects, each for one year. History, mathematics, Sanskrit and domestic subjects will be the alternatives taught in the college. Students wishing to take any other subject or to take honours must attend the general University lectures and classes.

The general curriculum of the University will be followed in all subjects. The sub-committee have framed an appropriate course of studies in domestic subjects

which is reproduced in Appendix I. The junior course includes an elementary study of the human body, personal hygiene, the hygiene of the house and its surroundings, sick nursing in the family, the care of little children, elementary science in its relationship to domestic economy, cooking, fine laundry work, marketing and household accounts. The senior course includes further study of natural science in its relationship to domestic economy, child study, and the training of young children.

Staff.

7. The following staff will be required :—

English	A professor on Rs. 400 to Rs. 600. An assistant professor on Rs. 150—200.
Mathematics	A professor on Rs. 150—400.
History	A professor on Rs. 150—400.
Sanskrit	A professor on Rs. 150—200.
Bengali	An Indian member of the general staff.
Hygiene	A lady doctor on Rs. 400—600.
Domestic Economy ...	A professor on Rs. 250—500.
Child Study	An allowance of Rs. 100 a month to a professor of the training college.
Chemistry, Physics, Botany and Zoology.	An allowance of Rs. 100 a month to be given to a professor of the University in each of the four subjects to deliver the prescribed courses of lectures. The lady doctor to be demonstrator in botany and zoology, and the professor of domestic economy to be demonstrator in physics and chemistry.

All the professors of the college should be ladies. The professor of English should be an English graduate. The lady doctor will, in addition to her work of instruction, also have medical control of the resident pupils of both college and school. The need for such an appointment for the school has been felt for some time, and proposals to create it have been put forward on several occasions. The professor of domestic economy will give instruction to pupils of the school as well as to students of the college. A sum of Rs. 300 out of the total salaries of the two professors may therefore be debited to the school. The lady selected to fill the post of professor of domestic economy, if from England, should be given a year's Indian experience before taking up her duties. If the science courses for medical students become so popular as to attract a considerable number of students, then a staff of women professors should be appointed and the whole of the college teaching placed in the hands of women. All ladies on the staff will be provided with free quarters in the college.

Examinations, Degrees and Diploma.

8. The examinations for women will be the same as for men in all subjects which they take in common. For the examination in domestic subjects a board of examiners will be appointed in accordance with the general regulations of the University. Women students should be examined both by written work and orally in their own college. Those who take science beyond the intermediate stage must attend the general practical examinations in the University laboratories.

Women should be eligible for any degree of the University for which they fulfil the prescribed conditions. The women's junior course, with its compulsory domestic economy, will afford a very suitable termination to the education of such students as do not wish to take a degree. This stage should therefore be marked by a suitable certificate, women students who leave after passing the junior examination being granted the "Women's Junior Diploma" of the University.

Residential System.

9. Hostel accommodation may be provided for 40 students, and it should be so arranged as to be capable of expansion when, as we confidently anticipate, the demand increases. Girls who do not live at home should be required to reside in the hostel; they should pay the usual hostel fee for lighting, servants, etc., and also for their own messing. All ladies on the staff of the college should be in residence.

The general regulations of the University regarding medical examination and regulated and compulsory exercise should apply to the college for women. The medical inspection, which will be carried out by the lady doctor, should be repeated periodically. Provision should be made in the compound for games, such as tennis, badminton and basket-ball, and there should be periodical competitions and tournaments. A woman's literary and debating society should be started, and ladies who are not members of the University might perhaps be admitted to it. A large summer-house should be constructed for the use in hot weather of both college and school.

Relationship with the High School and Accommodation and Equipment.

10. The Eden High School is and will continue to be a *pardá* institution; in the college it will not be possible to enforce an equally strict seclusion. The college and school should therefore be accommodated in separate buildings provided with separate entrances. The whole institution should be named the "Eden College

and High School for Girls," and it should be under the general control of the Lady Principal. The college should be in immediate charge of the Professor of English, who should be styled the Warden of the college and should be responsible for the conduct of the instruction.

The college building (see plates 26 and 27) will comprise class rooms, library, laboratories, common room for students, sitting room for professors, dining rooms, dormitories, rooms for professors, etc. Estimates for buildings and equipment are given in Appendix IX.

Fees and Scholarships.

11. Fees should be charged at the same rate as in the Jagannath College, namely, Rs. 4 in the junior and Rs. 5 in the senior classes. The usual University fees should also be levied. The junior scholarships for girls provided by the Government of Bengal will be tenable in the Dacca as well as in the Calcutta University, and students of the Eden College will be eligible to compete for the general senior scholarships of the University. A special senior exhibition of Rs. 20 a month tenable in the Dacca University should also be granted to the student who stands highest at the junior examination but does not gain a University scholarship.

CHAPTER XVIII.

College for the Well-to-do Classes.

We have endeavoured so to organize the new University as to enable it to discharge its fundamental obligation of making provision for all classes and sections of the community : the general arts colleges are designed to meet the needs and to suit the purses of the educated middle class, special provision is to be made for very poor students and for students of the lower castes, a separate college and an alternative course of studies are proposed for the Muhammadan community, women are to have a college of their own, and facilities are to be afforded to those who seek to become teachers or to enter the engineering, medical and legal professions. There is another class which deserves the most careful consideration. In the west, even in the most democratic countries, young men of the land-owning and wealthy classes take a prominent, sometimes the foremost, part in University life, and their training is rightly regarded as of the utmost importance to the State, since they start with greater potentiality for good or evil than do those who are less fortunately situated. From them also is largely derived the cultured leisured class which pursues knowledge and scholarship for its own sake, and which, by its patronage of the fine arts, helps to raise the level of taste of the nation. It is notorious that in Bengal the landholders, and others of high position and comparatively ample means, have failed to take due advantage of the State system of higher education ; they prefer to keep their sons at home and to give them such private tuition as they may be able to secure, or, in a few cases, to send them to Oxford or Cambridge. There can be no question that Bengal has suffered from the failure on the part of the upper classes to take their proper part in the educational system of the country, and that as education becomes more widespread and as the people take a more prominent share in the Government, this evil becomes more severely felt. The reason of the failure is perhaps to be found in the absence of a residential University. The colleges of the federal system, which are organized with the object of enabling young men of the middle class to qualify themselves for earning a livelihood, do not offer sufficient attractions to the sons of landholders and others of similar position, and objection has always been felt to the creation of a separate class college whose inmates would be isolated from the general interests of the student world.

Many thoughtful men of high position in Bengal have deplored the educational deficiencies of their class, and the Government has not been indifferent to the evil. With great pains schemes have from time to time been elaborated, but so far without important result. The question has again been brought forward by the Landholders' Association of Eastern Bengal, who made a prominent reference to it in a recent address which they presented at Dacca to the Governor of Bengal. His Excellency made a very sympathetic reply in the course of which he stated that he would ask the Dacca University Committee to ascertain the views of the zamindars of both parts of Bengal on the subject, to advise upon the suggestion, and, if they found it to be practicable, to submit proposals for financing the scheme. These instructions were conveyed to us in the letter from the Government of Bengal, No. 1264, dated the 10th August 1912, and we have endeavoured, as far as possible, to carry them out.

2. The Hon'ble Nawab Sir Khwaja Salimullah Bahadur, G.C.I.E., K.C.S.I., and Babu Ananda Chandra Roy have very kindly interested themselves in ascertaining the views of the various classes concerned on the suggestion made by the Eastern Bengal Landholders' Association. These gentlemen, in conjunction with other prominent persons of Eastern Bengal, circulated in rough outline a scheme for incorporating a college for the well-to-do classes in the new University, and in this and various other ways sought the advice and obtained the opinions of a large number of landholders and other persons interested in the question. After much preliminary discussion on these lines, a meeting presided over by the Nawab Bahadur of Murshidabad, and attended by the Maharajadhiraja of Burdwan and others of the principal noblemen and gentry of Bengal, was held at Calcutta. A note on the result of all these enquiries and discussions is given in Appendix XIII: the result is to show that a very strong feeling exists among landholders and others in favour of a college for the well-to-do classes, and that the suggestion that such a college should form a part of the new University meets with general approval. Having regard to the fact that the characteristics of a teaching and residential University are unfamiliar to many of those who have been consulted, it seems to us that the strength of opinion in favour of the scheme is remarkable and is a good augury for its success. We have indeed no doubt but that the college would prove most popular and of great advantage alike to the well-to-do classes, to the community at large and to the State. We have, therefore no hesitation in advising that the experiment should be made.

3. The conception in the minds of the promoters of the scheme is to provide a thoroughly well-equipped and well-managed residential college on the model of one of the colleges at Oxford or Cambridge, in which the students will be well cared for and will live in a style suitable to their up-bringing. They will be subject to proper discipline and control, and will receive a thorough physical, intellectual and moral training, so as to fit them for the position in life that

they may be expected to occupy. Subject to caste considerations messing arrangements will be common to all, and will be on a liberal, but not luxurious, scale. As in the other colleges of the University, the college staff will give instruction in the usual arts subjects, whilst for science and for special subjects and advanced instruction the whole teaching force of the University will be available. Arrangements should also be made for giving instruction in the college in subjects, such as the elements of law and of land surveying and estate management, which will be of special use to the sons of zamindars. The students will enjoy the advantages of the physical training and social life afforded by the University; they will have their playing-field, they will take part in the inter-collegiate and University matches, they will use the gymnasium, and they will become members of the Union and of other University societies. They should be taught to ride, a riding school and accommodation for their ponies being provided. Thus the students, while enjoying the special advantages of their own college, will join in the general corporate life of the University and will have ample opportunity, both in work and in recreation, to mix and to compete in friendly rivalry with the undergraduates of the general colleges.

4. Members of the new college who propose to take a degree will be required to pass the matriculation examination of the Calcutta University; this obligation need not be imposed on those who wish, without reading for a degree, to take advantage of the training which the college will afford: it should be open to the governing body to admit any suitable candidate on such entrance test as it may think fit to impose. In this way provision will be made for young men who, even though they cannot pass in every subject of the matriculation examination, will nevertheless benefit greatly by a course of higher instruction and by the advantages of University life. A promotion examination should be held at the end of the first year, at which those who fail to work and to profit by the college teaching will be weeded out. We hope also that the majority of the students will elect to read for a degree, and that, as the influence of the college becomes more and more widely felt, the proportion who fail to do so will continually become smaller. It will be for the governing body to make such arrangements regarding admission as will ensure the maintenance of a high tone among the students.

5. The success of the new college will depend largely on its Principal: a man of strong character will be needed, able to exert a healthy and inspiring influence over youngmen; great care should therefore be exercised in his selection. He should be an officer of the Indian Educational Service, and, like the principals of other colleges in the University, should draw a special allowance of Rs. 200 a month. For the subjects of English, history, geography and mathematics there will be required, in addition to the Principal, two officers of the Indian Educational Service, two officers of the Provincial Educational Service, and one officer of the Subordinate Educational Service. One officer of the Provincial Educational Service and one officer of the Subordinate Educational Service (who may also act as librarian) will be needed for

Bengali and logic; Sanskrit, Arabic, Persian and Urdu may be taught by the general University staff. This arrangement will make very ample provision for all ordinary subjects and will allow the staff of the college to take some part in the general work of University teaching. To give instruction in zamindari management, a competent person with good practical experience should be appointed. A practical surveyor and a riding master selected from among the retired officers of the Indian cavalry will complete the superior staff.

6. The buildings of the college (site No. 22 on the general plan and plates 28 and 29) will comprise a large hall, a library, common rooms for students and professors, class rooms, professors' rooms and offices. Hostel accommodation may be provided at the outset for 100 Hindus and 20 Muhammadans, accommodation for Hindus being in as many divisions as may be necessary for different castes. Each student should have a separate room of dimensions 12×15 feet. Provision is made for dining halls, kitchens, etc. All members of the staff belonging to the Indian Educational Service, and the majority of those in the Provincial Educational Service, should be in residence; quarters for some of them are provided in the hostels. Stabling for 100 ponies, a riding track, and quarters for servants are also provided. It is estimated that the buildings, equipment, lighting, sanitary arrangements, etc. will cost approximately six lakhs (*vide* Appendix IX).

7. The suggestion has been made, and favourably received by a number of the landlords who have been consulted, that the cost of building the proposed college should be met from the landlords' fees paid to the Collector under Chapters III and IV of the Bengal Tenancy Act, almost the whole of which become forfeit to the Government under section 18C of the Act. Although the proposed college will be freely open to students from all parts of Bengal and will, we are convinced, acquire popularity throughout the province, yet having regard to its position in the centre of Eastern Bengal, it is likely, particularly in early years, to serve especially the interests of the Dacca and Chittagong Divisions. Having regard to this circumstance it would perhaps be reasonable to devote to the purposes of the college only those fees which have been paid in the Dacca and Chittagong Divisions; the amount now in deposit in the two divisions will suffice for the purpose. We consider that the suggestion merits the careful consideration of the Government.

8. The following is an estimate of the monthly cost of the college (see Appendix X):—

	Rs.
Superior staff	4,400
Clerical „	110
Menial „	500
Contingencies	600
Total ...	5,610

In replying to the address of the Eastern Bengal Landholders' Association, His Excellency remarked that a college for the well-to-do classes ought to be largely self-supporting. If a fee of Rs. 40 a month, to cover all charges, except the cost of food, be levied, the income, when 120 students are in residence, will amount to Rs. 4,800 a month. Having regard to the circumstance that the staff of the college will take a share both in the administration and in the general teaching of the University, the estimated deficit of Rs. 810 a month may be met by the Government without in any way infringing the principle on which His Excellency laid stress. The institution cannot, however, be expected to pay its way until it has been some years in existence, and during this period, having regard to the general public utility which the college will possess, the Government should defray the balance of the cost of its maintenance.

9. The discussion of the question which has resulted from the publication of the address of the Landholders' Association and of His Excellency's reply shows that certain misapprehensions as to the character of the new college have arisen. These misapprehensions have given rise to the fear that the influence of the college will tend to render its students on the one hand narrow in outlook and sentiment and on the other idle and luxurious. The scheme of which we have given an outline will, we trust, serve to dispel these ideas. The foremost aim of the college will be to break down the intellectual and social isolation of the sons of the landholders and to bring them into the full current of the student life of a teaching and residential University. More ample provision for instruction and supervision are made for this special college than can ordinarily be afforded, and it will be the duty of the Principal and his staff to see that full use is made of these opportunities. Idleness and luxury will be equally foreign to the tone of the college.

10. There is one other aspect of the case which, although it does not directly concern us, we wish to bring before the notice of the Government. There is a strong desire that a residential school for boys of the classes with which we are now dealing should be established in Bengal; this suggestion, which appears to us to be an admirable one, should not be difficult to carry out. If the Government will take the initiative by building a good school in a suitable and healthy site (possibly at Kurseong), and will provide it with a thoroughly efficient staff imbued with the ideals of the great English public schools, then we have not the least doubt that the institution will be so greatly appreciated as to become practically self-supporting. Such an institution will supply a need as imperative as that which has arisen for a college, and the latter will not achieve its full measure of success unless an institution is established for the early training of the boys who will ultimately become its students.

CHAPTER XIX.

Islamic Studies.

THERE has been for many years past a great and growing dissatisfaction among the Muhammadans of Eastern, and also to a considerable extent among those of Western, Bengal, with the prevailing courses of madrasah instruction. They complain that these courses are superficial in content and old-fashioned in method, and that pupils who have been taught in this fashion become useless members of society. This feeling has given rise to a strong desire to modernize the courses and to combine with instruction in Islamic studies a thorough grounding in the English language. Proposals to this effect were negatived by the Government of Bengal in 1903, but were again urged with much force, and almost carried, in a conference which sat in Calcutta in 1908. The Eastern Bengal members of the 1908 conference were greatly dissatisfied with its result, and eventually a representative committee was formed at Dacca, with the Director of Public Instruction as President, further to consider the question. As the result of prolonged discussion, the Dacca committee framed a new and modernized course comprising junior, senior, and advanced stages. General school subjects were introduced into the junior course, English was made compulsory in both the junior and senior stages, and the advanced course in Islamic studies was so framed as to reach a high standard. These proposals were under the consideration of the Government of Eastern Bengal and Assam at the time of the territorial redistribution. The papers of the case were placed before us, and we considered them in the light of the suggestion of the Government of India that a Department of Islamic Studies should be included in the new University. The subject is one of great difficulty, and we were fortunate in securing the services of distinguished Arabic scholars, such as Shams-ul-Ulama Maulvi Shibli Sahib Nomani of Lucknow and Maulvi Shah Suliman of Patna, to advise us upon it. The sub-committee, of which these and other scholars were members, recommended that a Department of Islamic Studies should form an integral portion of the University of Dacca, the subjects of study being the Arabic language and literature, the various branches of Islamic learning, and English. The scheme framed by the Dacca committee of 1909-10 formed the basis of discussion, but the sub-committee found it necessary to introduce considerable modifications before presenting it as part of a University curriculum. We submitted the scheme of study framed by the sub-committee to Syed Hossain Bilgrami, Nawab

Imad-ul-Mulk Bahadur, C.S.I., C.I.E., and to Dr. J. Horovitz, Professor of Arabic in the M. A. O. College, Aligarh. The former expressed his full approval, and the latter considered that, although there may be differences of opinion on some points of detail, the scheme and the courses will constitute a very useful and valuable innovation. Dr. Horovitz also made some very important suggestions, to almost all of which we have given effect. The scheme as finally elaborated is explained in the following paragraphs and in the statement in Appendix I. As in other cases, the detailed course of studies is put forward only as a suggestion, which will doubtless require modification as experience is gained of its working.

Preliminary Madrasah Course.

2. The University course must necessarily be an extension of the studies of the madrasah, and the sub-committee therefore found it necessary to take into their consideration the madrasah curriculum. They have adopted as far as possible that laid down by the Madrasah Reform Committee, but have reduced the length of the school course in Arabic and Islamic Studies by about two years, in view of the much longer period of subsequent study which it is now proposed to introduce.

The madrasah course is divided into two sections : the junior and the senior. The junior course should contain six, and the senior four, classes, numbered respectively I—VI and VII—X. This arrangement corresponds with the classification adopted in ordinary high schools. A senior madrasah will teach both courses ; a junior madrasah, the lower course only.

The subjects for the junior course should, as recommended by the Madrasah Reform Committee, be Korán (first two classes), handwork (first two classes), compulsory Urdu (first four classes), vernacular (Bengali or Urdu), Arabic, English, history, geography, mathematics and drill.

The English course should extend up to the middle English standard, the standards in other subjects being somewhat lower. The course in Arabic should include reading and grammar taught by modern methods on the lines suggested in the report of the Madrasah Reform Committee, and the principles of Islam as in "Ad-Durrat-ul-Abássiah."

For those who, at the end of the junior course, wish to change to Class VII of a high school, an additional year's instruction should be provided in the madrasah to enable them to attain the middle English standard in general subjects.

There should be a scholarship examination at the end of the junior course for the award of scholarships for the senior madrasah course.

The subjects of instruction in the senior course should be Arabic, English, arithmetic and geometry, and Indian history. The sub-committee were divided in opinion as to whether history should be continued throughout the whole senior course,

the subject in Classes IX and X to be Islamic history; they decided by a majority of 7 to 5 votes that history should not be continued beyond Class VIII, but that to cultivate an historical interest in the minds of the students, historical readings should be included in the course of Arabic literature. The English course should be the same as for the Calcutta matriculation examination. In arithmetic, the junior course should be continued, and the standard should be somewhat lower than that of the matriculation examination. Geometry should be merely practical geometry up to the standard of Euclid, Book I. The following table indicates a suitable distribution of the hours of study :—

	Hours per Week.			
	VII.	VIII.	IX.	X.
Arabic	14	14	16	16
English	8	8	9	9
Arithmetic and Geometry ...	2	2	2	2
Indian History	3	3	...	...
Total ...	27	27	27	27

Details of the Arabic course are given in Appendix I.

3. A special matriculation examination for entry into the Islamic Department of the University should be held at the end of the senior course. This examination should include the following subjects :—

Arabic	... 6 papers.
English	... 2 „
Arithmetic and Geometry ...	... 1 paper.

Successful candidates should be classed in three divisions, each in alphabetical order. Percentages for passing and for classification should be as in the Calcutta matriculation examination. The examination should be held by a Board of Examiners to be appointed by the Council on the recommendation of the Boards of Islamic Studies, English and Mathematics, each for its respective subject. The entrance fee should be Rs. 2 and the age-limit 16, as in the Calcutta University. The examination should not include an oral test. Ten junior scholarships of the value of Rs. 10 should be awarded on the result of the special matriculation examination, tenable for two years in the Islamic Department.

4. Any madrasah in Bengal, recognized by the Local Government for the purpose, should be entitled to send up candidates for this special matriculation examination. As existing madrasah courses differ very considerably from that now proposed institutions desiring to receive this recognition will find it necessary to modify the content and method of their instruction. The Government madrasahs at Calcutta and Hooghly will doubtless consider whether they should provide special instruction

for pupils desiring to enter the Islamic Department at Dacca. No unendowed private madrasah will be able adequately to teach the revised course without a subsidy from public funds, and we therefore suggest that the Government should examine the condition of madrasahs in the light of the report of the Madrasah Reform Committee and of the survey which was subsequently made of these institutions.

As it is possible that students from outside the Bengal Presidency will be attracted to this new centre of Muhammadan learning, Local Governments of other provinces might be empowered to confer recognition, for the purpose of the special matriculation examination, on madrasahs situated within their territories: other pupils from outside Bengal might also be admitted to the examination, provided that they have satisfied the Senior University Professor of Islamic Studies as to their character and education.

The University Course.

5. The object of the University course will be to produce ripe Arabic scholars who possess in addition a thorough knowledge of English. We consider that a student thus trained will become a man of culture, who should make a good Government officer or a suitable recruit for the learned professions. The course in English should be the same as that of the pass B.A., whilst the curriculum in Arabic and Islamic subjects should lead gradually to a very high level of attainment. Instruction in English should, as in the case of arts students, include six hours a week in the junior, and eight hours in the senior course. The Arabic course will require at least twenty hours' instruction. Whilst the course should consist mainly of classical works, a certain number of books by modern authors should be prescribed.

The subjects of instruction in Arabic will include—

(1) Language.	(4) Fiqh.	(7) Hadis.
(2) Literature.	(5) Usûl.	(8) Tafsir.
(3) Kalám.	(6) Logic.	(9) Islamic History.

All subjects in the *junior course* will be compulsory and may suitably be arranged as follows:—

(*i*) Language and Literature ... 6 hours a week.

(*ii*) Dîniyát—

Tafsir ...	...	10 hours, first year; 12 hours, second year.
Usûl-i-Tafsir ...	...	
Hadis ...	...	
Fiqh ...	...	
Usûl-i-Fiqh ...	...	
Kalám ...	...	

(*iii*) Logic ... ... 2 hours, first year only.

(*iv*) Islamic History ... ... 2 hours, both years.

In the *senior course* language and literature will be compulsory and for other subjects a choice will be allowed between two groups as follows :—

Group A—

Language and Literature	... 8	hours a week.
Korán, Tafsir and Hadis	... 9	
Principles of Islam	... 3	

Group B—

Language and Literature	... 8	hours a week.
Fiqh ...	... 4	
Usûl ...	... 4	
Islamic History ...	... 6	

In the course for the *Master's degree* the student may select any one of the following subjects or groups :—

(1) Language and Literature.
(2) Tafsir.
(3) Hadis.
(4) Fiqh and Usûl.
(5) Kalám and Philosophy.
(6) Islamic History.

A description of the courses and an indication of the nature of the examinations are given in Appendix I. As the scheme is novel and experimental, the courses have been worked out in considerable detail, and the books proposed for study have been enumerated.

Degrees.

6. Although the proposed course will, in our opinion, represent a high standard of culture, yet it will be, from the very beginning, a culture different in kind from that which the ordinary arts course denotes; to mark this distinction separate degrees should be given. We recommend that these degrees should be styled *Bachelor of Islamic Studies* and *Master of Islamic Studies*, and that they should be denoted by the initials B.I. and M.I. The degrees of B. I. and M.I. ought to be regarded as equivalent to the degrees of B.A. and M.A. for Government employment and admission to the B.L. course. Similarly, the intermediate examination in Islamic studies should be regarded as equivalent to the intermediate examination in arts for the purpose of the rules relating to pleadership certificates, and the special examination for admission to the Department of Islamic Studies as equivalent in the mukhtiarship regulations to the general matriculation examination of the Calcutta University.

The intermediate examination in Islamic studies, though it will be superior to, yet in a measure will correspond with, the present senior madrasah examination, and it will make a suitable termination to a lower Islamic course. Successful

candidates may be described as having passed the First Examination in Islamic Studies, and may be allowed to use the title of F.I.

We consider that a B.I., inasmuch as he will have received a very fine linguistic training, should be permitted to follow the M.A. course and to take the M.A. degree in English.

The general University scheme for advanced study and research should apply to the Department of Islamic Studies, the degree being styled *Doctor of Islamic Studies* and denoted by the initials D.I.S.

Staff.

7. The following professorial staff will be required :—

Arabic Language and Literature	3	
Principles of Islam	1	
Law and Jurisprudence	1	
Hadis	1	
Tafsir	1	
Islamic History	1	(with assistance from the arts staff).
Total ...	8	

Of these one should be a European professor, one should be an Indian who has been trained in Europe, and one should be a scholar from one of the Arabic speaking countries. The European professor should receive an average salary of Rs. 1,000; the other two an average salary of Rs. 500 each. The remaining members of the staff should be officers of the Provincial Educational Service. This gives a total expenditure of Rs. 3,600 a month. The full staff will not be required for some years because, until the senior madrasahs have been reformed and are able to send up pupils trained for the new course, the number of students capable of following that course will be small. A small staff will therefore suffice at first, and it should be gradually increased as pupils arrive until the scale given above is reached. The future beyond this point will depend upon the success of the experiment. If it has a very marked success and a considerable body of students is attracted to the Department of Islamic Studies, further additions to the staff may eventually be necessary. It is desirable that the European officer should be engaged at an early stage of the proceedings, in order that from the outset the department may be well organized.

We earnestly recommend that the Government should take up the question of the reform of madrasahs at once, in order that, during the interval that will elapse before the constitution of the new University, some progress may be made in preparing pupils.

8. The Department of Islamic Studies will be located in the north-west end of the main University building, and provision has been made in the estimates for the library and other equipment (see Appendix IX).

Students of the Department of Islamic Studies will pay the tuition fees of the college to which they belong, and University fees at the rates laid down for arts students.

Four senior scholarships, of the value of Rs. 15 a month, tenable for two years, should be awarded on the results of the intermediate examination in Islamic studies. Five free studentships should also be allowed in both the junior and the senior course. Two post-graduate scholarships of the value of Rs. 20 a month should be granted to students reading for the M.I. degree, on the result of the B.I. examination.

CHAPTER XX.

Engineering.

THE Government of Bengal contemplate the establishment at Calcutta of a great technological institute, in which instruction up to a high standard will be given in subjects such as mechanical and electrical engineering, and technological chemistry: it will presumably be affiliated in various of its departments to the University of Calcutta. The discussion of this scheme and the decision to devote to other purposes the site now occupied by the Sibpur Civil Engineering College, have raised the question whether an institution is required in Bengal for training students for the higher branches of the profession of civil engineering, and, if so, where it should be situated and on what general lines it should be conducted. The question was put to the committee which met in Calcutta during the last cold weather to consider proposals for the new institute, and they advised that a separate residential and well-equipped college for civil engineers should be established within the Bengal Presidency. A suggestion having been made that the college might be included in the Dacca University, the Government of Bengal (in letter No. 1169, dated the 30th July 1912) directed us to take the question into our consideration, and, if we regarded the proposal favourably, to frame a scheme for carrying it out. We formed a sub-committee, including a strong professional element, to advise on the question. They expressed themselves strongly in favour of incorporating a College of Civil Engineering in the new University, in accordance with a very careful and thorough scheme which they elaborated. We are in accord both with the general opinion of the sub-committee and with their detailed proposals, which we have embodied in the present chapter of our report and in the appendices to which it refers.

2. The sub-committee, in the following passages of their report, discussed the need for an engineering college in Bengal, its proper scope, the number and class of pupils it should admit, and the question where it should be located :—

"The Government of Bengal have instructed the Dacca University Committee to consider the question of establishing a residential college for the training of civil engineers. It has been contended by some authorities that there is very little demand for the ordinary Indian college engineer, and that the majority of passed students have to be content with subordinate positions, for which an elaborate and costly

training is not necessary, and with a career which is unsuitable for the holder of a University degree. There is some force in this contention as applied to conditions hitherto prevailing, but we believe that, by raising the standard and tone of training, a type of engineer may be produced whose character and ability will tend to create a demand for his services among the great employers of engineering talent. There is also great scope for private enterprise throughout the country in regard to light railway projects and many other schemes involving engineering problems, and the annual production of a number of well-trained engineers in a provincial college should tend to stimulate private enterprise in many such directions. We have therefore endeavoured to frame a scheme which will ensure to the students a very thorough scientific and professional training, and which will, at the same time, improve their physique and mould their character so as to engender those habits of self-reliance, resource and initiative which are essential for a successful engineer.

"The very best training cannot, however, be expected to create a great sudden demand, and the college should limit its output to the number of engineers who will have a reasonable chance of obtaining, or rising to, superior posts in the engineering profession. This does not imply that all passed students should expect to obtain higher posts immediately on leaving college; they may, and should, have to prove their mettle by hard work in lower positions. But the system under which a large proportion of the passed students remain permanently in subordinate posts, as is at present the case, is radically unsound and should, by every means, be discouraged. All students should be so trained and tested as to ensure that they are fit for superior posts, and the number should, as far as possible, be limited to the demand. Having regard to these considerations, and after a review of the various openings for thoroughly-trained Indian engineers, we consider that the annual admission should at the outset be limited to 20 students, and that a total provision should be made for 60 students in a four years' course. The latter figure implies that some students, though a considerably smaller proportion than at present, will fall out by the way. This must be the case, because the subject of engineering is new to the students, and some of them will find themselves unfitted for it. When these have been weeded out, the remainder, granted an adequate entrance test and a thorough training, in general should achieve success. It may be hoped that after a few years the demand for engineers trained in the new college will increase to an extent that will render it possible to raise the number of admissions. In order that the college may be prepared for this eventuality, the class rooms, laboratories, etc., should be made capable of accommodating 100 students.

"Experience shows that an admixture of Anglo-Indian students is a great advantage to an engineering college in India. It is likely that if good training in the new college qualifies the students for higher posts, and they obtain them more readily than at present, young men of the domiciled community will be attracted to it in a greater number than have been attracted to Sibpur. Such a result would be of great benefit to this community. At the outset arrangements should be made for six

European students, and their hostel should be built in such a way as to allow of an extension of this number.

"In addition to the regular students reading for the University degree, occasional special students may be admitted, such, for instance, as students of the college for the upper classes (if such a college is established) and European and Anglo-Indian students who, although they have not the necessary initial qualifications for a University degree, have nevertheless qualities which indicate that they are likely to make good engineers. Such special students are likely to be so few in number that it will not be necessary to make extra provision for them in considering the scheme. The conditions of their admission may be left to the authorities of the college.

"The Government of Bengal have asked whether a Civil Engineering College can appropriately be established at Dacca as a portion of the new teaching and residential University. In order that we might give a well-considered reply to this important question, we prepared a scheme for an engineering college in the Dacca University, and then debated its suitability and the question whether greater advantages could be secured by selecting some other locality. We assumed, as the basis of discussion, that the college will be removed from Sibpur, and that all its branches, except higher civil engineering and mining, will be transferred to the technological institute, which it is proposed to establish at Calcutta. We are decidedly of opinion that the college should be in the Presidency of Bengal, and it appears to us that the only alternatives are the neighbourhood of Calcutta and the Dacca University. Calcutta has the advantage over Dacca that it is a centre of great engineering activity. In so far as students are concerned the deficiency of Dacca in this respect can, to a considerable extent, be remedied by visiting tours to large and interesting works, similar to those tours which are now undertaken from Sibpur (increased probably from one week to two weeks a year), whilst we have been able to suggest arrangements for practical training at Dacca which would not be possible in a self-contained college near Calcutta. Moreover, the training on works, for which we are suggesting a very important extension, must come after and not during the college course. The defect is more serious from the point of view of the professors. Living in the neighbourhood of Calcutta, the members of the engineering staff would have facilities for intercourse with men engaged in large engineering projects and works, which facilities must be denied to them at Dacca. Visits from engineers to a college at Dacca might, and should, be encouraged by their appointment to deliver short courses of special lectures, to take part in the government of the college and in the work of the Board of Studies, and to assist in the examinations. Such arrangements, although very sound as far as they go, would not be more than a palliative, and we consider that, from this particular point of view, Dacca is at a manifest disadvantage as compared with the neighbourhood of Calcutta. But other very important aspects of the case have to be considered. A college for 60 (or eventually 100) students at some place in the neighbourhood of Calcutta would be a small and isolated institution. The conditions would be the reverse of inspiring, and it

would be difficult or impossible to create the scientific and social atmosphere which is essential for the production of engineers of the type we contemplate. In a residential University of the nature which it is proposed to establish at Dacca, the conditions would be exceptionally favourable. The large and well-equipped laboratories of the University, in which engineering students would receive instruction from the general body of University professors, would be far more complete and efficient than any that could be established in connection with a small engineering college. There is no doubt, too, that the daily intercourse between the professors of the engineering college and those of the other departments of the University would have a very marked effect in maintaining a high standard of professional and technical competency, and that it would prevent that tendency to stagnation which sometimes affects small institutions. On the other hand, the presence of an engineering college in its midst would be of the highest value to the Dacca University. It would complete its scheme of studies in a very important respect, and the practical applications of physical science, which would constantly be before those engaged in allied studies, would suggest new and valuable modes of thought and enquiry. It has been found in other Universities that the combination of higher physics with engineering has been of very great advantage to both those studies. We propose that the Dacca School of Engineering and the Industrial Institute, to which reference is made in the letter of the Government of Bengal, shall be placed on sites adjoining the college, and that the students of the college shall utilize to the fullest extent the large workshops which these institutions will require. Here again the equipment for instruction will be on a far larger and more elaborate scale than would be possible in workshops designed solely for the use of 60 or 100 engineering students. Equally important will be the effect of the larger corporate life which becomes possible to the engineering student as a member of a well-organized teaching and residential University. He will have behind him and around him the traditions, not only of a single specialized college but also of a far more complex and powerful corporation; and the effects of this membership will, we hope, be visible in his after life. He will also have fuller and better facilities with regard to games and playing-fields; and here we might refer to the part he will take in the general scheme of physical training which has been outlined elsewhere. He will be a member of the Union and of the various University societies and clubs. In a word he will share in the corporate life of the University and will be saved from the concentration and narrowness which are apt to be the characteristics of highly specialized students.

"The financial aspect of the case is also of very great importance. Engineering training of the highest kind, such as we contemplate, must necessarily be very expensive. With laboratories and workshops designed to secure a variety of purposes and with a staff whose time is economically employed in connection with more than one department, it becomes possible to secure the necessary advanced and varied teaching without waste and at a cost which, we hope, will not be considered

prohibitive. We should, however, hesitate to advise Government to incur the enormous expenditure that would be required to train, in the manner which would alone produce engineers of a high type, a body of 60 to 100 students in a college unconnected with other educational institutions".

Messrs. Watson and Henderson and Rai Annada Prasad Sarkar Bahadur were the only members who considered that the advantages of Calcutta as an engineering centre outweigh the considerations to which the majority attached the first importance.

3. In their recent report on an "Enquiry to bring Technical Institutions into closer touch and more practical relations with the Employers of Labour in India", Lieutenant-Colonel Atkinson, R.E., and Mr. T. S. Dawson recommend that an institution for civil, mechanical and electrical engineering and for industrial chemistry should be established in the outskirts of Calcutta. This recommendation does not accord with the opinion of our engineering sub-committee nor with the advice of the representative committee of employers, educationalists and administrative officers which sat, last cold weather, at Calcutta. The strong arguments which led the Calcutta committee to the unanimous conclusion that the business quarter of the city is the only suitable site for a technological institute, were apparently not brought to the notice of Lieutenant-Colonel Atkinson and his colleague, nor, at the time when their report was prepared, had the scheme for incorporating a college of engineering in the first teaching and residential University of India been formulated. Had it been possible to place before them the many important considerations which influenced the Calcutta and the Dacca committees, we feel assured that they would have framed their suggestions on different lines. Without entering into the details of the discussion regarding the technological institute, we desire to say that in our opinion the general conclusion of the Calcutta committee is entirely sound. In so far as civil engineering is concerned we are convinced that the educational ideals of Chapter III of the "Report on Technical Education Enquiry" could be realized far better under the conditions described by our Engineering sub-committee than in an institution such as is contemplated in Chapter XVI of that Report.

4. The College of Engineering will form one of a group of technological institutions, the other members being the Engineering School, and the Industrial Institute to be established in accordance with the recommendations of the Dacca Conference of 1909. The Dacca School of Engineering is a flourishing institution, corresponding to the Apprentice Department of Sibpur College. It is at present located in the compound of the Dacca College: this arrangement is inconvenient, especially as all the buildings are required for college use. Effect may now be given to proposals, long since entertained, for the removal of the Engineering School by transferring it to a site adjoining the new Civil Engineering College. A reference to the general plan of the University will show the arrangement of the

whole site (No. 16), and, in particular, the convenient situation of the workshops between college and school. The Dacca conference of 1909 elaborated a scheme for the development of small industries with the aid of local capital, and for the training of recruits for this purpose from the ranks of the middle classes. The scheme includes an institute at Dacca centering in demonstration factories, round which are to be grouped a school of engineering, a school of design, and a technological laboratory, the whole to be linked up with an intelligence and employment bureau. This institute should be located on the site immediately to the north of the Engineering College and School.

Of the three members of the group, the College of Engineering alone will form a portion of the University. The sub-committee did not therefore discuss the organization of the school and institute or include them in their estimate of cost; the scheme that has been framed for them must be carried out by the Department of Industry, not by the University. For the same reason they did not consider in detail the common workshops, which are primarily for the benefit of the school and institute. The relationship between the three members of the group will require to be defined with some care. The Principal of the college should also control the school, the head master being in immediate charge and responsible for its discipline. The engineering staff of the college will have time to conduct a portion, at any rate, of the instruction of the school pupils. Except for these points of contact the college and the school should be kept apart, the students of each being housed and instructed separately. The close association of students belonging to the engineering and apprentice departments is generally recognized to be undesirable. The Industrial Institute should be under the independent control of an officer of the Department of Industry. Its members will use the common workshops, and the students of the Engineering College will derive advantage from its factories and special equipment. These arrangements will be made easy by the mutual co-operation of the two Principals.

Admission of Students.

5. The college should be open to students from the Provinces of Bengal, Bihar and Orissa, Assam, and Burma.

The ordinary educational qualification should be the I.Sc. of the Dacca or Calcutta University in English, mathematics, physics and chemistry. There should also be a test examination in drawing, comprising plane geometrical drawing and the copy of a simple freehand design. A voluntary drawing class for I.Sc. students of the Dacca University should be held in the Engineering College in preparation for this test. Students who have taken the I.Sc. elsewhere than in Calcutta or Dacca should be admitted only on special grounds. For European candidates the qualification should be the same as for Indians, or, at their option,

the Cambridge Higher Local Examination in mathematics, physics and chemistry, or the I.Sc. of the Dacca University in the same three subjects without the ordinary conditions of previous residence and study.

Before admission a very careful medical examination should be made of each candidate by the University Professor of Physical Education, who should submit a detailed report to the selection committee. No student should be admitted to the college unless he is of robust constitution, fitted for an active life, and devoid of any physical defect likely to hinder him in the performance of his duties. The certificate may be similar to that printed on page 38 of the Sibpur Calendar.

Every candidate for admission should be required to produce a certificate of good character from the Principal of his college. The maximum age-limit should be 20.

For the selection of students for admission to the college a standing committee should be formed, constituted as follows :—

(1) The Principal of the College.
(2) The University Professor of Physical Education.
(3) A representative of the railway companies, nominated in turn by the East Indian, Eastern Bengal, Bengal-Nagpur, Assam-Bengal and Bengal and North-Western Railways.
(4) A Public Works Department officer nominated by the Chief Engineer.

The nominated officers should serve for one year.

Courses of Study.

6. A four years' course should be given, leading to the degree of Bachelor of Engineering (B.E.). The subjects of instruction will be mathematics, physics, chemistry, geology, applied mechanics, descriptive engineering, drawing, surveying, heat engines, electro-technics, etc., workshop practice, field engineering and accounts. The mathematical course will extend over two years, and should be framed with a view, not only to extend the student's knowledge of pure mathematics, but also to make him intelligent, quick and accurate in computation: throughout the course special attention should be paid to graphic methods. In physics the "principal" and in chemistry the "subsidiary" pass courses of the Science Department should be followed, with such omissions and modifications as may be found desirable for engineering students. There will be a further course of chemistry in its special application to engineering work. The course in geology will be elementary, and will include mineralogy and physical geography with reference to the nature of rocks and water-supply. Applied mechanics will be taught in special connection with practical work in the engineering laboratory, and descriptive engineering will, as far as possible, be connected with workshop practice and field work. In the first and

second years drawing will be treated as a special subject, and in the third and fourth years it will form an important part of other courses. Surveying will be taught in the college in the first year, and in the field, apart from the regular college routine, during the second and third years. Appendix I contains a statement, prepared by the sub-committee, of an appropriate division of time and studies, as well as more detailed recommendations regarding particular branches of the course.

In the first and second years, and subsequently when time permits, students will receive instruction in simple practice in the carpenter's shop, smith's shop, foundry, fitting and machine shops. In the third and fourth years the time allotted for workshop practice and field work will be devoted largely to a course of systematic training in practical engineering. The courses should include the construction of simple steel structures, such as trusses, etc., building construction including foundations and bricklaying, handling of pulleys, erection of derricks and shears, use of pile-drivers, temporary bridges, the setting out of earthworks, erection of heavy weights, and allied subjects which the space and resources will allow. For railway work a short siding (shown in the general plan) should be laid with a few points and crossings and signals of different types, by means of which the principles of track-laying and maintenance can be demonstrated. The course is intended to enable the student to get some acquaintance with practical problems, and to accustom him to manual work.

The system of special courses and lectures on railway construction and other engineering subjects, which has to some extent been pursued at Sibpur, should be continued and extended. Engineers from important works and other authorities should be invited to visit the college for the purpose of delivering one or more lectures on engineering topics of present interest, or to describe works on which they are themselves engaged. Tours for purposes of instruction should form an important feature of the course.

Examinations and the Degree of B.E.

7. There is at present a tendency on the part of students who have obtained a certificate for some part of the course to leave college in order to seek work, and thus to sink permanently into the position of subordinates. This tendency should be discouraged, the college being intended only for students who wish to qualify themselves for the higher branches of the profession. With this object in view the intermediate examination in engineering should be abolished, and the University examination at the close of the second year of the course should be confined to those scientific subjects which will not be continued further, mathematics, physics, and general chemistry. At the end of the course there should be a University examination for the degree of Bachelor of Engineering, and the students who pass this examination should be at once eligible for the degree.

In both examinations due regard should be had to the quality of the practical work performed by the student during the course. Successful candidates in the B.E. examination should be classified as "passed" or "passed with distinction." A student who fails in either of the examinations may be permitted, after an additional year's study, to present himself once more for examination, the college deciding whether the student should be received back for this purpose. Periodical test examinations should be held during the course, but certificates should not be granted on the results of these tests, and no list, in order of merit, should be published. If at the end of any year the college authorities consider that a student has not made satisfactory progress, they may either require him to leave or put him back for a year.

Training on Works and the Degree of M.E.

8. The arrangements now existing for the practical training of candidates on leaving college and for the award of the Government guaranteed post are susceptible of improvement. The period of training is insufficient, the method of selection for the guaranteed post is not entirely satisfactory, opportunities for securing appointments for students are lost. It is necessary to devise some method which will give students every possible opportunity of becoming highly qualified civil engineers, which will bring them into touch with large employers of labour, and which will enable them to secure a qualification, widely recognized and therefore of real service in obtaining suitable employment.

We suggest the following scheme :—

(1) As soon as a student has taken his B.E. degree, the college authorities should endeavour to obtain employment for him extending over at least three years. Government works may be included in this category, but, with a view especially to ultimate employment, a considerable proportion of the graduates should be sent to non-Government employers, such as railway companies and private firms. The Government should, in any case in which it considers this course desirable, grant a studentship amounting, as at present, in the case of Indians, to Rs. 50 a month and, in the case of Europeans (which should include Indians living in European style) to Rs. 100 during the first year of their employment. Arrangements should be made for the efficient supervision of the student throughout the three years' course. A service record should be maintained by his employer, and the student himself should keep a book in which he should take notes of the special works on which he is employed, and of any other matters of engineering interest which may come under his notice. These note-books should be checked periodically by the employer and submitted to the Principal of the college for inspection at the close of each year. The Principal, or one of the professors, from time to time should visit the students to see how they are getting on and to interview their employers.

(2) A Bachelor of Engineering should be permitted to present himself for the degree of Master of Engineering, on the production of a certificate that he has been

employed on practical engineering work, under approved employers, for at least three years since taking his B.E. degree.

(3) A Board should be appointed to make full enquiry into the qualifications of candidates for the degree of M.E. This Board should consist of the Principal of the college and two experienced engineers to be appointed by the Council. The Board will—

(*a*) examine the certificates and testimonials presented by the candidates;
(*b*) interview and question the candidates;
(*c*) if necessary, communicate with their employers;
(*d*) generally satisfy themselves by every means in their power that the applicants are worthy of the degree.

(4) It should be open to the Public Works Department to select any Master of Engineering for a guaranteed appointment.

These recommendations differ from the suggestion made in the report of Lieutenant-Colonel Atkinson and Mr. Dawson, that every student passing out of an engineering college should serve a year's apprenticeship in the Public Works Department. The engineers, whether Government or railway, who served on our sub-committee, were unanimous in holding that three years is the minimum period which should be devoted to supervised practical training, and that young engineers will stand a far better chance of becoming efficient and of recommending themselves to non-Government employers, if they have to make their way in the works of railway and other companies or of private firms, instead of being kept, under conditions which have not proved very successful in the past, in some branch of the Public Works Department. Similar views with regard to apprenticeship were expressed by several members of the Calcutta Committee.

Staff.

9. The students of the Engineering College will receive science instruction in the University laboratories from the general University staff, and workshop instruction and practice in the combined workshops of the college and school. The Principal of the college, although he ought to give some lectures in special subjects, should not be counted in the general staff for instruction. For the subjects of mathematics and engineering the following staff will be needed :—

	Professors.	Junior Professors.	Assistants and Demonstrators.
Mathematics	1	...	1
Civil Engineering ...	2	3	3
Mechanical Engineering ...	1	1	1

The success of the college will depend upon the appointment of a Principal of very high calibre, and in order to obtain an engineer of the qualifications and force of character required, a considerable salary must be given: we suggest the rate of Rs. 1,500 to Rs. 2,000. The Principal should ordinarily be selected from the staff, but any engineer of the requisite high qualifications, preferably with Indian experience, may be regarded as eligible for the post.

In laying down the qualifications necessary for the professors of civil engineering two general principles must be considered: on the one hand the methods and practice of the college should be the result of the very latest and most up-to-date English experience, on the other they should conform to Indian requirements. One of the professors should therefore be a man recruited from home with the best possible qualifications as regards both theoretical and practical training, and also as regards experience in modern methods of teaching. He should have taken his degree at one of the Universities where engineering is made a speciality; he should have had several years' experience of practical engineering; and he should, if possible, be taken from the teaching staff of one of the leading engineering colleges in Britain. To attract a man with these qualifications a salary of at least Rs. 1,000 to Rs. 1,500 will be required. The other professor should be recruited from the Public Works Department. A good officer of about five years' experience should be selected; he should be paid an allowance of Rs. 200 a month; and he should be given the option of returning to his department after five years: it cannot be too clearly laid down or too urgently recommended, that a man of high qualifications and character is necessary; and it is essential that the appointment should be made so attractive as to be regarded as a prize in the service. The professor of mathematical subjects should be a man who has taken a high mathematical degree, and been through an engineering course similar to the Cambridge Mechanical Science Tripos. He may be recruited as an officer of the Indian Educational Service but if necessary might start on a higher rate of pay than the minimum. The professor of mechanical subjects will need to have, in addition to a sound theoretical training in general engineering, a thorough practical knowledge of up-to-date machinery and workshop methods; also, if possible, a good knowledge of electrical work, and experience of demonstrating with machinery. He too may be recruited as an officer of the Indian Educational Service.

It is of the utmost importance that all members of the superior staff should possess strength of character and a high ideal of their profession; without these qualities and the power to communicate to their students the principles underlying the high standard of conduct which is expected of a civil engineer, they will fail to achieve the purpose for which the new college is designed.

10. In so far as is possible men with Indian experience should be recruited for the junior professorships, such, for instance, as graduates of Indian engineering colleges who have been engaged in practical work. Men of different qualifications are desirable,

and they should be recruited from any available source. Junior professors should be members of the Provincial, and assistants and demonstrators members of the Subordinate, Educational Service.

Geology, as well as physics and chemistry, will be taught to engineering students in the Science Department of the University, and for this purpose an extra professor in the Provincial Service should be appointed, who should also be competent to take part in the instruction in chemistry. Geological and chemical specimens suitable for the instruction of engineering students will be included in the natural history museum.

Instruction in accounts and business methods will be supplied by the staff of the Industrial Institute (see paragraph 31 of the recommendations of the Dacca Committee).

Mr. T. H. Richardson differed from the opinion of the other members of the sub-committee on the subject of the qualifications and recruitment of professors. His note on the subject is given in Appendix VII.

Accommodation and Equipment.

11. Thorough instruction in the course proposed by the sub-committee will require extensive accommodation—lecture theatre, library, demonstration hall, and a full complement of class-rooms, engineering laboratories, drawing offices, apparatus rooms, etc. Plate No. 30 shows the liberal provision we have made.

The sub-committee estimated that a sum of 1½ lakhs (exclusive of the cost of the common workshops) should suffice to meet all reasonable requirements for equipment. The civil engineering section of the Sibpur Library will be available, and if any other portion of the Sibpur equipment is transferred to Dacca, the cost will be proportionately reduced.

12. It is most desirable that the maintenance of the roads and buildings of the University, including both repairs and minor alterations and additions, should be undertaken by the College of Engineering. Not only will this arrangement be convenient for the University, but—a matter of far greater importance—it will afford practical work for the professors of engineering, and provide many admirable opportunities for the practical training of the students. For this purpose, it will be necessary to employ an Assistant Engineer and a clerk of the works; the former of these officers will be added to the general staff, and will be available to assist in the work of instruction. The Principal of the college will be the officer responsible for the control of works and he will allot their execution and supervision. The Works Office will be in a separate block situated close to the college. The capital and recurring charges for the works staff and office are included in Appendices IX and X; funds required for the annual maintenance

of roads and buildings will be provided from the Public Works Department budget. The electric power needed by the University will be obtained from the general source serving the town and station; but for the sake of practical instruction there should be a separate installation to furnish power for the College of Engineering, the school, and the institute. The existing plant of the School of Engineering will, if transferred to the new site, be more than sufficient for this purpose.

Residence and Physical Training.

13. All students must live in college. Accommodation should be provided for 60 Hindus and, in a small separate hostel, for 6 Europeans and Indians who live in European style; until there is a sufficient number of Muhammadans to form a hostel, they should live in the Muhammadan College. Each student should have a room of his own—of dimensions 10 × 15 feet. Provision should be made for the residence of all members of the staff, European and Indian. As in the case of other colleges of the University no rent should be charged.

Great importance should be attached to the thorough physical training of engineering students. The sub-committee consider that the general University system should be made applicable to them, and that the three hours' compulsory exercise should be enforced throughout the course.

All students of the college should be taught to ride, and should be required to obtain a certificate from the authority appointed for the purpose before proceeding to the B.E. degree. Provision for instruction may be made in connection with the riding school in the College for the well-to-do Classes. While the student is under instruction and until he obtains the prescribed certificate, a fee of Rs. 5 a month should be charged; the course for an average student should not ordinarily exceed one year. As far as they are available, ponies may be lent to passed students at a small charge.

Fees and Scholarships.

14. The tuition fee at Sibpur is Rs. 10 for the first and second, and Rs. 15 for the third and fourth years. It is now proposed to offer much greater advantages and a sharp distinction will no longer be made between the first and second portions of the course. We therefore think that the fee should be Rs. 15 during all four years. No rent should be charged; but students should pay the same hostel fee as will be levied in other colleges, and they should make their own arrangements for messing.

15. The scholarship system should be framed so as to enable a few poor students of merit to maintain themselves without difficulty. As the general entrance

qualification will be the I.Sc. of the Calcutta and Dacca Universities, all students will have had an opportunity of securing a Government senior scholarship. We do not think that it is desirable to offer, in addition, special entrance scholarships; but having regard to the comparatively high fees of the Engineering College, the ordinary scholarship may not suffice for a poor student, and we therefore consider that the tuition fees of Government scholars should be remitted. A senior scholarship is ordinarily tenable for two years; at the end of this period, if the college authorities consider that the scholar has earned the privilege by meritorious work, the scholarship, with remission of fees, should be continued for a further period of two years. Two additional scholarships of Rs. 25 a month, with remission of fees, should be granted at the end of the second year of the course on the combined result of the College and University examinations. The Forbes (endowed) Scholarship should be awarded under existing conditions, and be accompanied by remission of fees. The scholarships proposed in this paragraph will cost less than those at present granted at Sibpur; we have not therefore made any allowance for them in the statement of expenditure contained in Appendix X.

Expenditure.

16. Details of the capital and recurring charges of the college are given in Appendices IX and X. The totals amount to about Rs. 6,88,000 and Rs. 1,20,000 respectively. This is not expenditure to be incurred in consequence of the creation of the new University, but merely the cost of the transfer and improvement of the civil engineering branch of Sibpur College. The capital cost may be defrayed from the sum of Rs. 16¾ lakhs which will be paid for the present site and buildings, and against the recurring charges, under which may be included a share of the general cost of science instruction, should be set off a sum of Rs. 1,10,000 representing the estimated annual net cost of the existing Civil Engineering Department.

CHAPTER XXI.

Medicine.

THE sub-committee appointed to consider the subject of medical studies advised that arrangements should be made in the Dacca University for preliminary scientific and professional instruction for the medical profession, up to the standard of the first M.B. of the Calcutta University. They recommended that the Dacca University should examine its own medical students, that the Calcutta University should be invited to recognize the final examination at Dacca as equivalent to its first M.B., and that the Calcutta Medical College should receive the passed Dacca students for the second M.B. course. This arrangement should in due time be replaced by a full medical course at Dacca.

We are in accord with the unanimous opinion of the sub-committee in favour of a medical department teaching up to the first M.B., and ultimately to be developed into a full medical college; we also accept the scheme which they have framed, and have embodied it in the following paragraphs.

Admission of Students.

2. Students may be admitted to the Department of Medicine on the same conditions as to the Departments of Arts and Science, and the entrance qualification should be the matriculation examination of the Calcutta University. There will be no separate medical college; students of medicine, like students of other scientific subjects, will be received into the various colleges and taught by the University. The number to be admitted each year will depend upon the demand for training and the capacity of the Calcutta Medical College to receive those students who have completed their course at Dacca. The sub-committee consider that arrangements should be made to admit 50 students a year, but that this number is likely soon to be exceeded. All students who pass the first M. B. at Dacca should be entitled to admission to the Calcutta college for the completion of their course.

Course of Studies.

3. The course should cover four years—two years leading up to a special intermediate examination in science, followed by two years of professional study.

The special I.Sc. course has been described in the chapters on Arts and Science. A student may also be admitted to the professional course after taking the ordinary I.Sc., provided that he undergoes a further course of one year in botany and zoology, and passes in those subjects, before proceeding to his professional studies. Similar arrangements may be made in the case of Calcutta students, provided that they pass a practical test in all the prescribed science subjects. Students who propose to study in the British Isles may wish to obtain a certificate that they have passed in a classical language: Sanskrit (or Latin, if instruction be provided) may therefore be offered as an optional subject, but it will not count in the examination.

The professional course should be divided into two parts, a University examination being held at the end of each year. This arrangement will induce students to work steadily throughout the course, a matter of particular importance in their case in view of the great difficulty which they experience in qualifying themselves for a medical degree.

The subjects for the third and fourth years will be—

3rd year.—Physiology, Anatomy and Organic Chemistry.

4th year.—Physiology, Anatomy and Materia Medica and Pharmacy.

The course in physiology should be the "principal" pass course. The subsidiary course will be studied in the first year, and the advanced course in the second year, according to the general arrangements for the B.Sc. The courses in anatomy, organic chemistry and materia medica should be the same as for the Calcutta first M.B.

Examinations.

4. The examination for the medical I.Sc. has been explained in the chapters on Arts and Science. The two examinations of the professional course may be styled "first professional" and "second professional" respectively. The former will include the "subsidiary" examination in physiology for the B.Sc., osteology and elementary anatomy, and organic chemistry. The latter will comprise the "advanced" pass examination in physiology, more advanced anatomy, and materia medica and pharmacy.

A student who does well in any subject in the second professional examination may be permitted to present himself for a further examination for honours in that subject. Honours students should be arranged in order of merit; other students in alphabetical order. Inasmuch as the second professional examination merely marks the end of a preliminary stage of the medical course, no diploma should be granted to successful candidates.

Staff.

5. The Senior University Professor of Physiology (who will be a medical man) should supervise instruction in his own and other medical subjects, and should have general control of medical studies. The staff for physiology has been included in the Science Department. For anatomy the following will be required :—

1 Professor at Rs. 600.
1 Senior Demonstrator at Rs. 200—300.
1 Junior Demonstrator at Rs. 100—200.

An allowance of Rs. 100 a month for giving instruction in materia medica should be made to one of the Assistant Surgeons on the University staff. Students will attend the Mitford Hospital for practical instruction in pharmacy; the course is a short one, and a fee of Rs. 300 a year may be paid to the hospital staff for the work and materials involved.

Accommodation and Equipment.

6. For anatomical studies a lecture theatre, a dissecting-room, a prosector's room, a museum with library and reading-room, a professors' room and a preparation-room will be required. There must also be a small museum for materia medica, and the University professor in charge of medical studies will need a room and a small office. The dissecting-room should be some way from the laboratories and other University buildings, and the whole medical accommodation may be provided in the site numbered 15 in the general plan; it is conveniently situated and at the same time lies apart from other buildings.

The sub-committee estimate the capital cost of equipment for anatomy, including the museum, at Rs. 50,000, and for materia medica at Rs. 5,000. Details of the capital and recurring charges for medical studies are shown in Appendices IX and X.

Fees and Scholarships.

7. Medical students should pay the ordinary college fees and, in addition, a University fee of Rs. 2 during the intermediate, and Rs. 5 during the professional courses.

On the result of the second professional examination two scholarships should be awarded to the honours students who stand highest in physiology and anatomy respectively. These scholarships should be of the value of Rs. 20 each, and should be tenable during the three years of the second M.B. course.

CHAPTER XXII.

LAW.

DIFFICULT questions arise in connection with legal studies in the new University. To assist us in arriving at a satisfactory solution we obtained the kind assistance of the authorities named in Appendix XII, who sat with us and also helped to frame estimates of capital and recurring expenditure.

2. A preliminary point for decision is whether law should continue to be a subject of University study at Dacca. The Hon'ble Sir Ashutosh Mukharji is opposed to this on the following grounds: the instruction given at present leaves very much to be desired, and reasonable improvement could not be effected without incurring expenditure heavier than the small number of students would justify. If the Government is prepared to spend a large additional amount on legal education, they would be better advised to devote the money to the further improvement of the well-attended Calcutta College. Moreover, however large the additional expenditure may be, Dacca, which lacks the advantage of a High Court, with its large amount of legal business and especially of appellate work, can never provide so good a training as Calcutta. A considerable number of the best practising lawyers now teach in the Calcutta University Law College, and even high salaries would not attract equally good teachers to Dacca. Many of the best among the students will in any event go to Calcutta in order to obtain the privilege of passing the prescribed time as an articled clerk while reading for the B.L. degree. In short, law teaching at Dacca means heavy expenditure without securing the best teachers or the best students.

Whilst we admit that these considerations have considerable force, we are nevertheless of opinion that the Dacca B. L. classes should not be closed, and we are supported in this view by the unanimous opinion of our other advisers. The Dacca law classes, which have been in existence since 1864, have produced many sound lawyers and successful practitioners; their abolition would occasion great disappointment and discontent. Granted that the present instruction is not what it ought to be, there is no reason why it should not be made efficient by the appointment of an adequate staff of competent instructors, and if such a staff be employed then the absence of a High Court is not an insuperable objection. To deprive the new University of legal students, staff and library would limit its scope and restrict its variety in a very important direction, and would render the whole institution less complete and efficient. It would injure the University in another way: at present a large number of the M.A. arts students study simultaneously for the

B.L. and M.A. degrees; if this privilege were continued at Calcutta and withdrawn from Dacca, many of the best post-graduate students of the latter University would be tempted to migrate, and the whole of the new organization would be greatly injured. Lastly, we consider that the benefits which the students will derive from continuing their membership of a teaching and residential University will go far to counterbalance the advantage that Calcutta may claim as a great legal centre.

3. Having decided that law studies should be continued at Dacca, the further question arises of the relationship in which they should stand to the Calcutta and Dacca Universities. Our advisers differed in their views on this important point: some considered that the Law College at Dacca should continue to be affiliated to Calcutta, and that it should have no connection with the Dacca University; others held the opposite opinion that there should be a Law Department at Dacca independent of Calcutta. The arguments in favour of the first view are based on the consideration that the B.L. degree is not merely an academic distinction, but admits to the higher branches of the legal profession, corresponding in this respect to the Bar examinations which centre in London: it would be inconvenient, and might injure the reputation of the legal profession, if two Universities, both within the jurisdiction of the Calcutta High Court, gave B.L. degrees varying in standard and based upon different courses of study. It was also pointed out that there is not material at Dacca out of which to form a Faculty or Board competent to decide on the claims of candidates to be admitted to the Bar, and therefore that the Dacca Board would necessarily be composed largely of Calcutta judges and lawyers, who might not be willing to perform academic functions at Dacca, and who could certainly exercise such functions more conveniently at Calcutta. Two boards on which Calcutta members would predominate—one sitting at Calcutta and one at Dacca—would appear to be anomalous and unnecessary; and even if this defect were disregarded, the initial obstacle of two avenues for entry into the profession would not be overcome. On the other hand, it is contended that legal instruction at Dacca will be much better supervised by a local than by a distant University; that the University and the Law Department will benefit mutually and in a very high degree by intimate connection; and that law students at Dacca should not be deprived of those privileges of membership of a teaching and residential University which will be extended to all other students of the same grade. It is further argued that there is no reason to suppose that Calcutta Judges and lawyers will decline to serve on a Board of the Dacca University, and that it may be left to the High Court to see that suitable courses and an equally high standard are maintained in each University. After a very careful consideration of the case, we have come to the conclusion that a middle course will be best. We recommend that, while the teaching of Law should be entirely under the Dacca University, students should be examined by, and receive their degrees from, the University of Calcutta, which should accept for examination any student duly presented by Dacca. Under this arrangement the new University will retain the full advantages of a Law Department; professors and students of law will

enjoy the benefits of membership of the University; and the difficulty with regard to the maintenance of a uniform standard and course of studies for entry into the legal profession, will be overcome. We believe that this compromise will go far to satisfy those eminent authorities who viewed with grave concern the proposal to cut law teaching at Dacca adrift from Calcutta.

In view of the above recommendation, it is not necessary for us to discuss the entrance qufialications of law students, nor the duration, subjects and other aspects of the courses of legal studies, since in these matters it will be necessary to conform to the Regulations of the Calcutta University.

4. A sub-committee, of which an Hon'ble Judge of the High Court, a distinguished member of the Calcutta Bar, the Principal of the Calcutta University Law College, and the Vice-Principal of the Dacca Law College were members, advised us on the staff and equipment required to place legal instruction at Dacca on a satisfactory footing. It was decided that provision should be made for 60 students in each of the three years of the course, or for 180 in all, and that instruction should take the form of general lectures, moot courts, and tutorial classes of 20 each. On this basis, a staff of three professors and five tutors will be needed, the professors being whole-time officers and the tutors practising lawyers of the local bar.

The following rates of salary are recommended :—

	Rs.
Senior Professor	850
Second ,, ...	750
Third ,, ...	600
Each Tutor	200

5. The Law Department will be situated in a block of the main University building adjacent to the lecture rooms of the Arts seminars. As the work of the Law Department will be done mainly in the morning hours and as the seminar lecture rooms will not be in constant occupation, the Law Department will also be able to make use of them. It will thus have very ample accommodation for its professors, library, lectures, moot courts and tutorial classes.

A sum of Rs. 25,000 may be allowed for initial expenditure on the law library and an annual sum of Rs. 1,000 for its upkeep. This estimate is somewhat less than that proposed by the sub-committee, which appeared to us to be excessive compared with the provision which we have suggested for other departments of the University.

6. A student must graduate before entering on the B.L. course and law students of the Dacca University will thus come under the general regulations for post-graduate students. Residence in college will not be compulsory, but may be allowed if accommodation is available. This concession should not, however, be extended to a student who, in addition to his legal studies, takes up work outside the province of the University. A B.L. student may be allowed to read for the M.A. degree and a Junior Assistant may be permitted to take the B.L. course. The fee for instruction should be Rs. 6 a month.

CHAPTER XXIII.

Teaching.

A TRAINING COLLEGE for English Teachers was established at Dacca under the orders of the Government of India in July 1910. It has done excellent work, although greatly hampered by inadequate accommodation and an insufficient equipment of practising material. A scheme has been framed for the concentration of the high schools in the south of the city of Dacca, thus forming an enclave which will contain six large high schools established, in close proximity to each other, on a residential basis; it has also been suggested that the training college should be removed to a site in the midst of this area, that the several high schools should be used for practising work, and that the Principal of the Training College should exercise general supervision over them. If this scheme be carried into effect it will place the training college on a thoroughly satisfactory basis, and will so greatly improve the education given in the high schools as to make them efficient preparatory institutions for the new University.

The school district will be situated at a considerable distance, but every endeavour that the circumstances will permit should be made to enable the staff and students of the Training College to feel the reality of their connection with the University: they should become members of the Union and of the various University societies; they should be encouraged to take part in the University athletic system; and University professors of other departments should occasionally give lectures at the college on subjects of special interest to teachers.

2. The sub-committee appointed to consider the subject of Teaching in the new University recommend that each year 50 students should be admitted to the college for a course of one year leading up to a diploma, and 15 for a course of two years qualifying for the degree of Bachelor of Teaching (B.T.). These recommendations which will increase the size of the college and vary its scope and organization in very important respects, are fully explained in the following extract from the sub-committee's report:—

"The existing arrangements at Dacca provide for the training of 55 teachers. The sub-committee agreed that this might, with advantage, be raised to a total of 80, but that a large number would detract from the efficiency of the college. The principal objects of the scheme are to give a professional training, and to induce power of independent thought. To attain these objects, it is necessary to arrange for the

personal contact of the Principal with individual students in the supervision of tutorial work and practical teaching. It would be impossible to effect this with very large numbers in the classes, especially as the influence of the Principal will also necessarily be spread over several schools in which students will practise. The fact that the Training College staff itself will need close supervision for some years adds to the desirability of limiting numbers. Again, the organization of the practical work of a large number of students, scattered in several schools, is a complicated matter needing continual alteration by the Principal, and it becomes more complicated and difficult as the numbers increase. It was suggested that a special Master of Method might be appointed to relieve the Principal of much of this work, but it was considered better to limit the numbers and to secure that the Principal should be in touch with the work. A comparison with the first-grade training schools of Bengal (for middle school teachers), in which classes larger than 25 are not allowed, strengthens the case for limiting the numbers, and this is confirmed by the recognized European standard for training colleges that there should not be more than 8 students to each member of the staff.

"It is proposed that the 80 students should be divided into the same classes of persons as at present. An example showing the lines on which the committee thinks the division might suitably be made as regards numbers is given below. It is expected that these numbers will change as conditions become altered. It was felt that to train too large a proportion of 'candidates for employment' would result in a condition of things in which the senior men in the department were generally untrained, while the younger men, though made more efficient by training, would have to be retained for a long time in subordinate positions. As things become normal through the mass of teachers becoming trained, the number of candidates for employment will increase, while the number of Government teachers will decrease. The fact that several such applicants were rejected at the Dacca Training College this year, owing to there being no vacancies, shows that there need be no anxiety about their coming forward.

(*a*) Government teachers	40
(*b*) Inspecting officers	12
(*c*) Teachers from aided and Board schools ...	12
(*d*) Candidates for employment	16
Total ...	80

"With 50 men divided into two parallel divisions working for a diploma, and 15 men in the first and 15 in the second year working for a degree, we have a total of 80 in the college, and it should be possible to secure a personal touch between the Principal and Vice-Principal on the one hand, and the students on the other, especially in the small classes working for the degree. This arrangement involves a considerable departure from present practice.

"In the Dacca Training College the diploma men at present take a two years' course, and the degree men a course of only one year. Elsewhere in Bengal the course is for one year in the case of both classes of students. This means that the worst men get the best teaching. It is true that the diploma men are now less well qualified academically than the others, but the functions of the training college do not include the imparting of general education. By the restriction of the course to the acquirement of professional skill and knowledge the lower students can receive enough training in one year to enable them to follow the meaning of technical advice and instruction given by better qualified Inspectors and head masters. It is hoped that by turning out 50 of these diploma men a year, a body of intelligent educational opinion will be formed in the country. The diploma course will not be confined to undergraduates, and it is expected that at first many graduates will prefer to take a one year's course and to secure the professional diploma, which eventually should become a minimum qualification for all high school teachers and inspecting officers.

"While it would be desirable that all should have a two years' course, expense forbids it, and experience has shown that proportionately the second year is less profitable for the men of lower qualification than the first year. In the case of the more highly qualified men the second year should be the more profitable. Moreover, the plan suggested has the merit of taking only a few men from their work for two years, and these will probably be men who can better afford to be away from their families for the longer period. The present L.T. two years' course places many ill-paid teachers in serious financial straits.

"We are bound to consider the better qualified class of men as the basis of hope for the improvement of education. The classes will be small, having only 15 men in each. They will work for two years in the atmosphere of the Training College and the connected schools, and a continuous tradition will be maintained in the college by the men of the second year class. They will be well qualified academically, and will be of a mental calibre to profit by a more prolonged and careful study of the principles of their work. They will eventually be placed in positions of wide responsibility and influence as head masters and deputy inspectors. The proposed course will build, upon an academic foundation, general and special technical skill, a study of the child and his interests, and a philosophical consideration of the place and relations of the school as an institution, in the past and in the present. This cannot be done in a nine months' session, and it is hoped that the longer course as in Law, Medicine, etc., will give dignity and a professional feeling to a body of men whose self-respect is of great importance.

"The case in short is that the influence of the Training College will be most effectively exercised through a comparatively small number of highly qualified men, who will have under them a large number of graduates and under graduates so trained as to be able to afford intelligent co-operation.

"The diploma will not carry a right to letters after the name. As a member of the sub-committee pointed out, a prejudice already exists against a graduate's using a title lower than a degree, and a diploma is the most usual and suitable means of indicating the professional qualification of one engaged in education."

We endorse the opinion of the sub-committee on all these important questions, and the following paragraphs embody their more detailed suggestions.

Courses of Study and Examinations.

3. There will be two courses of study—

(1) for the degree of B.T. (two years), open only to selected graduates;

(2) for the diploma in Teaching (one year), open to graduates and others whose qualification is not lower than the I.A. or I.Sc. of the Calcutta and Dacca Universities, or their equivalent.

The first year's course for the B.T. will comprise child study, including the rudiments of physiology and hygiene, the organization of education, method, the study of the life and work of a selected educationalist, and practical teaching; and the second year's course, principles of education including child study, ethics and elementary experimental psychology, method, history of education, educational classics, and voluntary investigation work. The course for the diploma will be identical with the first year's course for the B.T. with the substitution of "principles of education and their application" for the short course on physiology. The details of the proposed courses, which are given in Appendix I, represent the results of the experience gained at Calcutta and Dacca during the past few years.

There should be an examination at the end of each year's course, at which students should be required to pass in all subjects. Details of these examinations are given in Appendix I. Successful candidates, both for the diploma and the degree, should be classified into those who pass and those who pass with distinction.

A candidate, who has passed the first part of the examination for the degree of B.T., but is unable to proceed to the second year's course, may, with special sanction, be allowed, after not less than one year spent in teaching, to present himself for the diploma examination in the principles of education and, if successful, should receive the diploma.

Methods of Instruction.

4. The 80 men in the college will be divided into four classes, one class for each year of the degree course, and two sections for the one year of the diploma course. No class will thus contain more than 25 students. There will be cross divisions of the classes for the study of special subjects.

The sub-committee propose the following arrangements for practical teaching :—

"In the diploma and first year degree classes, the practical work will mainly be done over a period of weeks towards the end of the course, so that students may practise the principles which they have studied and seen illustrated in demonstration and criticism lessons. The whole staff will be free for supervision and consultation during this time, except those few who are lecturing to the second year degree class. This plan is the means of effecting considerable economies in staff, because it is necessary to use a large number of supervisors of practical work, and in this way each member of the staff for the time being becomes a master of method, and especially so for his own subject.

"The lessons will have been prepared beforehand by the students under supervision. The length of the courses of teaching for each student, and the school and school class in which he is to teach will be a matter for continual revision by the Principal.

"In the second year's study for the degree, the practical teaching will be spread over at least one school term."

Staff.

5. The staff of the college comprises a Principal and a Vice-Principal in the Indian Educational Service, three professors in the Provincial Educational Service, two lecturers in the Subordinate Educational Service, a drill-master and a drawing-master. The proposed increase in the number of students will entail the addition of another officer in both the Provincial and Subordinate Educational Services. A medical officer of the status of an Assistant Surgeon will also be required to lecture on physiology and hygiene; at first a whole-time man may not be needed. The Principal of the college will be the Senior University Professor of Teaching, and the remaining members of the staff may be graded as follows :—

One Indian Educational Service officer—University Professor.
One Provincial Educational Service officer—Professor.
Two Provincial Educational Service officers—Junior Professors.
Three Subordinate Educational Service officers—Assistant Professors.

The officer who is appointed to supervise nature study in vernacular training establishments should deliver lectures in the college on his special subject.

We have not included the staff of the Training College in our estimates, as the additional expenditure for increasing the size and improving the instruction of the college is not a charge which can properly be debited to the cost of creating the new University.

6. The sub-committee recommend that the college should be styled the "Dacca University Teachers' College," because the present name is often confused with those of the Normal School and the Police Training School. The proposed name suggests

the technical character of the institution, as well as its status as a corporate part of the University.

We also desire to submit to the Government the recommendation of the sub-committee that recruitment for the Education Department should be so organized that men trained in the Teachers' College should, as soon as possible after they have obtained their qualification, be appointed to responsible and well-paid posts. In so far as the conditions of a graded service permit, preference in making promotions should be given to trained officers.

CHAPTER XXIV.

Administration of the University.

THE detailed administration of a teaching and residential University must be entrusted mainly to its professors and executive officers; the graduates of the University should be given a place in its government; and an outside element should be admitted of sufficient strength to ensure that questions of principle are decided with due consideration for the needs and sentiments of the community at large. In order that these conditions may be satisfied, two governing bodies will be required—a fairly large legislative assembly on which all three of the above elements will be represented and a smaller executive body comprised of members of the University staff with the addition of a few elected members. We therefore recommend that the government of the Dacca University shall be vested in a Chancellor, Vice-Chancellor, Convocation and Council.

2. The Governor of Bengal should be the Chancellor of the University, and the position to be assigned to him and to the Vice-Chancellor should be as in other Indian Universities. The Chancellor, when he is pleased to be present, will preside over meetings of Convocation. He will nominate a certain number of members of Convocation, and the election of other members will be subject to his confirmation; he will appoint the external members of the governing bodies of the colleges; he will confirm proposals for the grant of honorary degrees. We have also suggested (*vide* Chapter X) that the selection of University Professors and Senior University Professors should be made by the Chancellor; this duty should, in our opinion, be performed by the University rather than by the Government, and it is of such importance that it should be entrusted only to the Head of the University. The Vice-Chancellor will preside over Convocation in the absence of the Chancellor; he will be the general representative of the Chancellor and the chief executive officer of the University; his duties, to which a further reference is made in a later section of this chapter, will be more diversified than in the case of the Vice-Chancellor of a federal University.

Convocation.

3. We suggest that Convocation shall be composed as follows:—

(1) The Chancellor.
(2) The Vice-Chancellor.
(3) The Members of the Executive Council of the Government of Bengal.

(4) The Commissioner of the Dacca Division.
(5) The Director of Public Instruction.
(6) The Warden of the University.
(7) The Registrar of the University.
(8) The Principals of the incorporated colleges.
(9) The Professors (excluding Junior and Assistant Professors) of the University.
(10) Twenty-five graduates to be elected by the general body of registered graduates.
(11) Five Muhammadan graduates to be elected by the Muhammadan registered graduates.
(12) Ten Muhammadan graduates, residents of the Provinces of Bengal and Assam, to be nominated by the Chancellor.
(13) Twenty-one persons, of whom at least two-thirds shall be non-officials, to be nominated by the Chancellor.

The Registrar will be Secretary to Convocation.

This constitution will give a Convocation of about 140 members—a number considerably in excess of the maximum limit imposed on the Senate of the Calcutta University by the Indian Universities Act, 1904. The larger figure that we suggest for a smaller University is desirable, inasmuch as it allows for ample representation of all classes concerned, and justifiable, because the functions which it is proposed to confer upon Convocation can be suitably performed by a large deliberative body. Convocation should have authority to appoint sub-committees for the consideration of any special matter coming before it.

The principal officers and the professors of the University will be *ex-officio* members of Convocation. We desire to give ex-students a substantial place in the government, and to reserve the system of nominations for the purpose of adding to Convocation persons outside the University who will take special interest in it and are specially qualified to advise on its concerns : the proportion of elected graduates to nominated members is therefore fixed much higher than in other Indian Universities. The proviso that at least two-thirds of the nominated members shall be non-officials has been introduced with a view to give opportunity for the adequate representation in the University of the professional and other classes concerned. The election of a member of Convocation should, as in other Indian Universities, be subject to confirmation by the Chancellor.

4. The Government of India comment in their letter on the small part that has been assigned to Muhammadans in the government of the University of Calcutta ; and they indicate a desire, with which we are in full accord, that Muhammadans should have a voice in the management of the new University that is to be established in their midst. Unless, however, special arrangements are made for the representation of Muhammadans, they may find themselves no better off in Dacca than in Calcutta. For, whereas under the Calcutta constitution the great majority

of Fellows are nominated by the Chancellor, the Dacca Convocation will, for reasons already explained, be composed mainly of professors and graduates of the University. In spite of their educational progress in recent years, Muhammadans will continue for a long time to be in a small minority in both of these classes, so that if their representation were left to members of the staff and to election by the general graduate body, it would be somewhat meagre. The balance could not be adjusted by nomination, since the comparatively few nominations reserved to the Chancellor will serve a number of purposes and interests, and could not be made on a sectarian basis. We have therefore proposed that five Muhammadan graduates should be elected by a constitution composed of the Muhammadan graduates of the University, and that ten others should be specially nominated by the Chancellor. We should have preferred that all the Muhammadan representatives should be elected, but for some time to come the constituency would not be large enough to elect as many as fifteen candidates. In ten years' time, if the number of Muhammadan graduates has increased sufficiently, the ten nominations might be abandoned, the number of elected members being raised to fifteen; and it may be hoped that at a more distant date the Muhammadan element in the University will have increased to such an extent as to render any special regulations for their representation unnecessary.

5. The Indian Universities Act, 1904, confers the franchise on Masters and on Bachelors of not less than ten years' standing. In accordance with our general principle that every inducement should be given to young graduates to interest themselves in their University, we propose to reduce the limitation in the case of Bachelors to four years. There is no reason why a Bachelor of four years' standing should not take part in University affairs; whilst if the opportunity is deferred for ten years, it is likely that most graduates will no longer care to avail themselves of it—long dissociation will have broken the tie. Only registered graduates can elect, or stand for election, to the Senate of a University constituted under the Indian Universities Act, 1904; registration is voluntary and subject to the payment of a fee, which is fixed, in the case of Calcutta, at Rs. 10 initial and Rs. 10 annual. We consider that, in the new University, registration should be compulsory, the initial and annual fee being fixed at Rs. 5. Those who wish to do so may compound for all future payments by the contribution of Rs. 40. The initial fee should be paid before the degree is conferred; if the annual fee remains unpaid, the name of the graduate should be removed from the register and he should lose the franchise and other privileges which follow on registration. These should include the supply of a copy of the Calendar (or a portion of it) at half price and other concessions similar to those accorded in the Calcutta University. The name of a graduate may be replaced on the register subject to such conditions as may be laid down in the regulations. Ex-students of the Dacca and Jagannath Colleges who have graduated in the Calcutta University should be admitted to the privileges of registered graduates of the Dacca University without payment of any initial fee.

6. Convocation should deal only with legislative matters and questions of general principle; it should not have power to revise orders of the Council dealing with the executive government of the University. All proposed regulations and changes in regulations should be submitted by the Council to Convocation, which should have power to reject, amend or confirm, subject to the final sanction of the Local Government. A copy of the annual budget should be sent to all members of Convocation, and at the next ensuing meeting any member should have power to move a resolution upon any of its items, and such resolution, if passed, should be referred to the Council which should be required to present a report on the subject to Convocation. It is desirable that questions relating to tuition and hostel fees should come before Convocation, and they should therefore be prescribed by regulation. Any member of Convocation should have liberty at any of its meetings to move a resolution on any matter germane to the welfare of the University, and such resolution, if passed, should be referred to the Council for report. Convocation should have authority to confer honorary degrees on the recommendation of the Council and subject to confirmation by the Chancellor.

Members, other than *ex-officio* members, of Convocation should hold office for three years, and should be eligible for re-election or re-nomination. At the end of of each of the first three years one-third of the elected and nominated members should retire, the selection being made by ballot. This will secure a regular recruitment of one-third of the members of these classes in each following year.

Council.

7. The Council of the University may be composed as follows:—

(1) The Vice-Chancellor.

(2) The Commissioner of the Dacca Division.

(3) The Principals of the incorporated colleges.

(4) Six professors appointed by the Chancellor as follows:—four from among professors working directly under the University, and two from among college professors.

(5) Six members, of whom at least two shall be Muhammadans, to be elected by Convocation from among its own members.

This constitution makes adequate provision for the different elements which are needed without raising the number of members beyond the limit suitable for an executive body. The majority of the Committee support the proposal for the election of a minimum number of two Muhammadan members; Dr. Rash Behary Ghose,

Babu Ananda Chandra Roy and Babu Lalit Mohan Chattarji are opposed to the special representation of Muhammadans on the Council.

The Vice-Chancellor should be Chairman of the Council and, in his absence, the senior officer present among Principals and University Professors should preside. The Registrar should be Secretary, but not a member of the Council.

Members of the Council, other than *ex-officio* members, should hold office for three years, and should be eligible for re-election but not ordinarily for immediate reappointment. The same rule should obtain in the case of all Boards and Committees of the University. The method to secure partial renewal each year indicated for Convocation should be applied in all cases.

8. The Council will be the supreme executive authority of the University, and will be responsible for its general and financial administration.

In particular, the Council should exercise the powers conferred on the University by Government in respect of staff and establishment. It should, according to the extent of those powers, appoint, or recommend to the Government the appointment of, officers of the University, members of the teaching staff, and members of the subordinate establishment in so far as the latter are not appointed by colleges. It should either of its own motion, or on the application of the Principal of a college or other authority, suggest to the Government additions to, or modifications of, the sanctioned staff. The Government should consult it on questions relating to the transfer of officers. It should select professors for giving instruction in honours and post-graduate courses.

The Council should approve the general arrangements for teaching made each term, including the University time-table of courses of instruction and inter-collegiate lectures and classes. It should, as the occasion may require, make such changes in courses and methods of instruction as are not fixed by regulation.

The Council should appoint examiners and consider their reports ; it should award scholarships and prizes ; and it should decide upon whom degrees shall be conferred.

The Council should pass the budget and apportion funds among departments, colleges, etc. It should have authority to accept endowments and to make arrangements for the administration of trusts.

The Council should recommend to Convocation new regulations and modifications of existing regulations, and it should report on any matter referred to it by Convocation. All questions involving a relaxation of the regulations of the University should, in the absence of express provision to the contrary, be referred to the Council.

The Council will be responsible for the up-keep of the University and the custody of its property.

Boards and Committees subordinate to the Council.

9. As the Council will not be able to deal directly with the great volume of multifarious business arising in the University, it should exercise its functions with the assistance of Boards and Committees. These will be directly subordinate to the Council, to which they will submit their proceedings, recommendations and rules. The members may include persons who, though not belonging to the University, are in a position to give useful advice and assistance. Members, other than those who sit on the board or committee by virtue of their office, will be appointed by the Council for the usual term of three years. The following boards and committees should be constituted by regulation :—

(1) Special Boards of Studies.
(2) General Board of Studies.
(3) Committee for Students' Affairs.
(4) Maintenance Committee.
(5) Finance Committee.
(6) Library Committee.
(7) Appointments Board.

10. Sixteen Special Boards of Studies will be required for various subjects or groups of subjects as follows :—

(1) English.
(2) Sanskrit.
(3) Bengali.
(4) Arabic, Persian, Urdu and Islamic Studies.
(5) History.
(6) Economics.
(7) Philosophy.
(8) Mathematics.
(9) Physics.
(10) Chemistry.
(11) Botany, Zoology, and Physiology.
(12) Domestic subjects for women.
(13) Engineering.
(14) Medicine.
(15) Law.
(16) Teaching.

This distribution may be found in practice to require some modification.

A Special Board of Studies will be composed of the Professors (excluding junior and assistant professors) of the subject, the external examiners in the subject for the time being, and such other external members, if any, as may be appointed by the Council: the inclusion of external examiners will give them an opportunity of getting into touch with the teaching of the University. If persons with special knowledge of the subject who are likely to be of assistance to the Board are available outside the University, they may be appointed by the Council as external members. The Senior University Professor of the subject will be Chairman of the Board; in the case of a group of subjects, the selection from among the senior professors will be made by the Council. The Board will elect its Secretary from among the members

The constitution of the Special Boards for professional subjects should be prescribed in more definite detail as follows :—

(*a*) *Engineering*—

The Principal of the Civil Engineering College, *President.*
The two Professors of Civil Engineering.
The Professor of Mechanical Engineering.
The Professor of Mathematics, Civil Engineering College.
The Senior University Professor of Physics.
The Senior University Professor of Chemistry.
Two external Examiners.
The Senior Government Inspector of Railways, Calcutta.
A Government Engineer—not below the rank of Superintending Engineer—to be nominated by the Chief Engineer to the Government of Bengal.
An Engineer not in Government service to be nominated by the Council.

(*b*) *Medicine*—

The Senior University Professor of Physiology, *President.*
The Senior University Professor of Physics.
The Senior University Professor of Chemistry.
The Senior University Professor of Botany.
The Senior University Professor of Zoology.
The Professor of Anatomy.
The Lecturer on Materia Medica.
The University Professor of Physical Education.
The Civil Surgeon, Dacca.
The Superintendent of the Medical School, Dacca.
Two external Examiners.

(*c*) *Law*—

The Senior University Professor of Law, *President.*
Two Professors of Legal Studies.
The District Judge, Dacca.
Two members of the Dacca Bar.
Two external Examiners.
Any other person who may be appointed by the Council.

(*d*) *Teaching*—

The Principal of the Teachers' College, *President.*
Two Professors of Teaching.
Two external Examiners.
An Inspector of Schools to be appointed by the Council.
The Head Master of a High School to be appointed by the Council.
Any other person whom the Council may wish to appoint.

The Board of Studies for Domestic Subjects will also require a special constitution: we suggest the following:—

A Senior University Professor, *President.*
The Principal of the Eden College and High School.
The Warden of the Eden College.
The Professor of Hygiene, Eden College.
The Professor of Domestic Economy, Eden College.
The University Professor of Physical Education.
One external Examiner.
Three ladies to be nominated by the Council, of whom at least two shall be Indians.

The Principal of the Eden College and High School, the Warden of the College, and one of the nominated members of the Special Board of Studies, to be selected by the Vice-Chancellor, should be entitled to sit as members of the Council when it transacts business specially relating to the education of women. The Warden of the college should be a regular member of the General Board of Studies. With these exceptions, members of the staff of the Eden College should not ordinarily be eligible for membership of the various boards and committees appointed to conduct the business of the University.

11. The Special Board of Studies for any subject or group will advise on courses of study and text-books; it will make arrangements for University and intercollegiate teaching; it will assist in the preparation of the time-table for the subject or group; it will make recommendations for filling up vacancies in the teaching staff and for the appointment of examiners; it will recommend candidates for research scholarships and it will report annually on their work; it will, in general, advise the Council on all matters referred to it, and submit to Council all matters connected with the subject or group (other than purely collegiate affairs) which require the orders of the Council. Joint meetings may be held of two or more boards to settle matters of common concern which need not go before the General Board.

12. The General Board of Studies will deal with all general questions and arrangements relating to courses of study and examinations; it should consider and collate the teaching arrangements for the term proposed by the various Special Boards and it should frame and submit to the Council the general University time-table; it should advise on questions relating to staff; it should allot lecture and class rooms for University teaching, and it should make arrangements for conducting examinations.

The General Board of Studies should be constituted as follows:—

The Vice-Chancellor, *President.*
The Presidents of the Special Boards.
The Principals of the incorporated colleges.
The Senior Professor of Engineering.

The Registrar will be Secretary, but not a member, of the Board.

13. Residence of students, the tutorial system, discipline outside the college precincts, transfers between colleges and between the Dacca and Calcutta Universities, University societies and other elements of the social life of students, physical education and the health of students will fall within the functions of the Committee for Students' Affairs.

The Committee should be constituted as follows :—

The Vice-Chancellor, *President.*
The Warden, *Secretary.*
The University Professor of Physical Education.
The Civil Surgeon, Dacca.
Four members to be appointed by the Council from among Principals and professors, of whom at least one shall be a Hindu and at least one a Muhammadan.
Two students to be appointed by the colleges, the students of each college by rotation selecting a member.

14. The Maintenance Committee will be responsible to the Council for the upkeep of the buildings, grounds, roads and playing-fields of the University; and it will deal with water-supply, conservancy, drainage, lighting, sanitation and other similar services. The composition should be as follows :—

The Vice-Chancellor, *President.*
The Warden, *Secretary.*
The Collector of Dacca.
The Superintending Engineer, Dacca Circle.
The Principals of the incorporated colleges.
The Senior Professor of Engineering.
Two Professors appointed by the Council.

15. The Finance Committee will keep the accounts of the University, and will advise the Council on all financial questions. It will draw up the budget and frame proposals for the apportionment of the annual grant. It should be composed as follows :—

The Vice-Chancellor, *President.*
The Registrar, *Secretary.*
Three persons to be appointed by the Council from amongst its members.

16. The Library Committee will have charge of the University and Seminar Libraries, and will advise the Council on all questions connected with library maintenance and management. It should be composed as follows :—

The Vice-Chancellor, *President.*
The Librarian, *Secretary.*
Five persons to be appointed by the Council.

17. An important feature in the recent development of Universities is the attempt that has been made both to assist students in deciding as to their future course of life and, when their college career is finished, to help them to secure suitable positions. This has usually been effected by the establishment of an Appointments Board. It need hardly be pointed out how important this question has become in connection with Indian education, and we feel that without some such organization the new scheme would be incomplete. We therefore suggest the establishment of a Board whose business it should be to maintain a carefully classified register of students seeking employment and to enter into communication with Government officials and other employers. Judging from the experience of other countries we anticipate that there will be an increasing tendency on the part of employers to have recourse to the Board when a post becomes vacant. The Board will receive information from the colleges and University professors, and will thus serve as a medium of communication between the employer on the one hand and the students of the University on the other. To ensure that the Board should be in a perfectly independent position, we suggest that no commission should be taken in respect of appointments obtained, but that all students who enter their names on the books of the Board should pay a registration fee of Re. 1 year. This, with possibly a small Government grant, will furnish the necessary funds to meet current expenses. The Board may be constituted as follows :—

The Vice-Chancellor, *President.*
The Warden, *Secretary.*
The Principals of the incorporated colleges.
Three Senior University Professors to be appointed by the Council.

Officers of the University.

18. The following will be the principal officers of the University :—

The Vice-Chancellor.
The Warden.
The Registrar.
The Librarian.
The University Professor of Physical Education.

The Vice-Chancellor will be the head of the executive. The duties which he will be called upon to perform will be so onerous, that the office should not be held in combination with another appointment such as the Principalship of a college or a Senior University Professorship ; but if the Vice-Chancellor can afford the time to deliver occasional courses of lectures, we consider that this would be of great advantage both to himself and to the University. The Vice-Chancellor should be an educational officer of high status, and he should be granted a salary of Rs. 2,250 a month with a sumptuary allowance of Rs. 250 a month and a residence free of rent. We consider that the appointment should not be held

permanently: a permanent Vice-Chancellor would be likely to overshadow the Council; it is desirable that, by changing the incumbent of the office, a new point of view should from time to time be introduced into the administration of the University; and it will be an encouragement to the educational services that the appointment should be open to as many senior officers of merit as possible. The term of office should be for five years, and a Vice-Chancellor should be reappointed only for special reasons, and for not more than two years at a time.

We do not propose to attempt a comprehensive definition of the duties of the Vice-Chancellor. As the executive head of the University, he should be thoroughly familiar with all aspects of University work and life; all matters of importance should come before him; and he should be well acquainted with all the senior members of the staff. He will preside over Convocation in the absence of the Chancellor, and over the Council and the six principal Boards constituted by regulation. He should be responsible to Council for the observance of the University regulations. He should have authority to visit any college at any time in order to satisfy himself that the administration is satisfactory, and that the regulations and rules of the University are duly carried out. Where necessary, he should report on any defect to the Council, and an order of the Council passed on such a report should be binding on the college concerned.

19. The Warden will be the chief executive assistant of the Vice-Chancellor. His duties will extend, in particular, to discipline outside the colleges; to the maintenance of the grounds and buildings of the University; to water-supply, lighting, drainage, sanitation and other general matters affecting the convenience and the health of the University; to athletic sports; to the societies, the functions and all other aspects of the corporate social life of the University; and to the conduct of examinations. He will be Secretary to the Appointments Board, a duty which, as time goes on, is likely to become very onerous. He should be an officer of the Indian Educational Service.

The Registrar will be the chief secretarial assistant of the Vice-Chancellor. He will be the head of the University office and of its accounts department. He will conduct the official correspondence of the University and will be the custodian of its records. He will be Secretary to Convocation, to the Council, to the General Board of Studies, and to the Finance Committee. He will have charge of the clerical arrangements for examinations, and will prepare the lists of candidates, the actual supervision of the examinations and the arrangement of the examination halls being a function of the Warden, whose duties will end when he hands over the answer papers to the Registrar. The Registrar should be an officer of the Provincial Educational Service.

The Librarian should also be an officer of the Provincial Educational Service; he will have the custody of the University Library and will be Secretary to the Library Committee.

The functions and position of the University Professor of Physical Education have been described in Chapter XV. The physical training and health of students will be his special charge; he will thus be concerned with athletic sports which will, in their corporate and social aspects, be within the province of the Warden.

College Government.

20. We consider that a governing body should be appointed for each college, the constitution of which may be as follows:—

(1) The Principal.

(2) Three Professors to be elected by the Professors and Junior Professors on the staff of the college.

(3) Two persons, who are not members of the college, to be appointed by the Chancellor.

The Principal should be President and should have a casting vote: one of the Professors on the governing body should be appointed by the Principal to be its Secretary. Elected and nominated members should serve for three years.

The following matters should be included among the functions of the governing body:—

(*a*) Projects for the improvement of the college.

(*b*) Recommendations regarding new subjects of instruction and additions to the staff.

(*c*) Recommendations regarding appointments to the staff.

(*d*) Appointments to the subordinate establishment to the extent to which authority has been delegated to colleges by the rules of the Government of Bengal.

(*e*) Hostel rules and disciplinary and other matters outside the work of instruction.

(*f*) Finance.

(*g*) Any important question affecting the wellbeing of the college.

The general recommendations with regard to governing bodies will be found suitable for the Engineering and Teachers' Colleges. In the case of the governing body for the College for the Well-to-do Classes the number of members who do not belong to the college may be raised from two to four, in order that persons of the classes for whom the college is intended may take a special interest in it and an important part in its management.

The governing body of the Eden High School for Girls will require to be reconstituted to meet the altered conditions. We suggest that it should be composed as follows :—

The Commissioner of the Dacca Division, *President.*
The Principal of the College and High School, *Secretary.*
The Warden of the College.
One professor of the college to be elected by the college staff.
One teacher of the school to be elected by the school staff.
Three members to be appointed by the Government of Bengal.

Relations of the University with the Government and the Director of Public Instruction.

21. We consider that the control of the Government over the University should be exercised directly, and that in order that the Government may be kept informed as to its progress and management, the Director of Public Instruction should be appointed Official Visitor, with full powers to inspect all colleges and departments. The University should correspond with the Government on all questions excepting those relating to staff, in which case correspondence should, for the sake of convenience and despatch, be conducted through the Director.

We recommend that the Government should confer on the Vice-Chancellor the powers with regard to leave which are delegated to the Director of Public Instruction by the Bengal Rules and Orders. These powers include the grant of privilege leave to all officers, and the grant of leave of all kinds to officers in Classes VII and VIII of the Provincial Educational Service, to officers of the Subordinate Educational Service, and to ungraded officers whose pay does not exceed Rs. 250 a month. We also recommend that all other powers with regard to staff which have been delegated to the Director of Public Instruction, including the authority to appoint officers of the classes enumerated above, should be exercised in the University by the Council. This general recommendation cannot extend to cases, such as promotions in the Subordinate Educational Service, which must necessarily be dealt with by the head of the department. The Council should have the same authority as is vested in the Director of Public Instruction, subject to budget provision, to make minor additions to the staff: this includes the appointment of teachers, clerks, and menials, outside the grades of the educational services, on pay not exceeding Rs. 45 a month, subject to the submission of quarterly statements. The Council should be consulted before an officer serving under the University is transferred elsewhere; similarly if the Council wishes to obtain the services of an officer from outside the University, or the removal of a member of the University staff, it should make an application to the Director of Public Instruction, who will, if necessary, refer the case to the Government.

In order that the Government may be kept informed of the conduct and merit of officers serving under the University, the present system of annual reports should be maintained. These reports should be submitted by Principals of colleges through the Vice-Chancellor, or, in the case of officers serving immediately under the University, by the Vice-Chancellor direct, to the Director of Public Instruction.

Colleges should not correspond directly with the Government or the Director of Public Instruction; any college requiring additions to staff, buildings, etc., or desiring to raise any question which will require Government orders, should submit the case to the Council.

Financial Arrangements.

22. We appointed a sub-committee to consider the financial system which should be followed in the new University. The question is of considerable difficulty and of great importance, because the conditions which will prevail have no close parallel in any institution which the Government at present controls. The sub-committee, with the valuable assistance of Mr. C. B. Sen of the Accounts Department, prepared a scheme which appears to us to be suitable and convenient, and which we have reproduced *in extenso* in Appendix III.

The scheme is based on two main principles: the first that all receipts should be credited to the Government and that the Government should bear all charges; the second that, as far as possible, accounts work should be centralized.

The University will be maintained by the Government, the members of its staff will be Government officers, and its fees and other receipts will meet only a portion of its annual cost. In these circumstances the simplest and most convenient course will be, that all receipts from fees, fines and miscellaneous sources should be credited to the Government, that salaries and establishment charges should be paid direct from the treasury, and that the Government should make an annual grant to cover all other expenditure. The annual grant should be paid into a University fund so that the unspent balance will not lapse at the end of the year. Subject to the general control of the Government, the University should have full authority to deal with this fund and to apportion it among the various colleges and departments. Before the commencement of each year, and as soon as the amount of the Government grant is known, the Finance Committee will prepare a budget estimate of expenditure and submit it to the Council. After approval, the estimates will serve as authority to colleges and departments to incur expenditure under the ordinary heads of contingency; but all items of a special or unusual nature, or which exceed a certain fixed amount, should be submitted to the Council for previous sanction. This system represents a very wide extension of that which obtains in the Presidency College, an extension which is justifiable in view of the

magnitude and importance of the new institution and of the character of its administration. The Government may eventually be willing to grant a larger measure of financial autonomy to the new University, but at first the measure of decentralization which we suggest would appear to be sufficient, while it will be of great advantage to the University to work under a simple financial system during the early years of its organization.

Accounts work will be more efficiently conducted in a central office with a well-paid establishment than in a number of small offices with comparatively low-paid clerks; it is also important that Principals and University professors should be relieved, as far as possible, of routine office-work. The sub-committee therefore propose that students' fees and all other receipts should be paid into the central office, and that all accounts of expenditure should, as far as possible, be kept in that office. The detailed scheme which the sub-committee have framed shows that this system can be followed without difficulty or danger.

Fees due to the Union and the Athletic Association will be paid by students into the central office with their monthly tuition fees, but will be credited to separate funds whose accounts may be kept on the lines suggested by the sub-committee. The sub-committee have also made proposals for the management of endowment funds and of hostel messing accounts.

The Teachers' College should be financed independently of the rest of the University.

University Regulations.

23. In the present and previous chapters we have discussed practically all those matters which will find a place in the Act of incorporation and regulations of the University. The constitution should be sufficiently elastic to allow of free growth and development, and the regulations should not therefore enter into details, or decide questions, which can properly be settled by an order of the Council. They should deal with the establishment of colleges and departments of the University, with the constitution and general functions of the component parts of the administration, with the principal officers, with general questions relating to courses of study but not with the details of curricula, with the general features of examinations, with fees and scholarships, and with the general principles of the residential and disciplinary system.

CHAPTER XXV.

Sites and Buildings.

THE new University will need an extensive and self-contained site, large buildings of suitable design and numerous residences, the whole forming a group so dignified as to be a valuable source of inspiration to the students who come under its influence. If the Government will consent to devote to the use of the University the southern portion of the civil station built for the late Government of Eastern Bengal and Assam, the difficulty of making adequate provision for these requirements will be very greatly lessened. The area in question, which is well situated round the southern end of a large maidan, is about 450 acres in extent, and contains the Dacca College, the new Government House, the Secretariat, the Government Press, a number of houses for officers, and other minor buildings; adjacent to it is a vacant space of about 130 acres, originally intended to accommodate the clerks of the head-quarters offices, which will make excellent playing-fields. In framing a scheme for the conversion of this quarter into a University, we have made the fullest possible use of the large and costly buildings which already exist; we have endeavoured to arrange and design new works, so that they may fit in with the old and form with them a useful and harmonious whole; we have, above all things, avoided the overcrowding of sites and buildings; we have made due allowance for future expansion; and we have, as far as possible, arranged the site in such a manner that the students of all the colleges will have ready and convenient access to those institutions, such as laboratories, libraries and lecture rooms which are to be used in common. The health of the students being, in our opinion, a matter of paramount importance, we invited Major W. W. Clemesha, M.D., I.M.S., Sanitary Commissioner with the Government of Bengal, to advise us, from this point of view, on the proposed use of existing buildings, on the selection of sites, and, in general, on the sanitary arrangements which should be made. His report on these matters is contained in Appendix IV.

2. It is so difficult to convey by mere verbal description an adequate impression of the arrangement of sites and the planning of buildings, that we have preferred to make our suggestions in the form of the plans and illustrations which are appended to our report. Mr. H. A. Crouch, Consulting Architect to the Government of Bengal, gave us invaluable assistance in laying out the general scheme of the University and has also designed and prepared the plans of all the new buildings. Mr. C. P. Walsh, Superintending Engineer, Dacca Circle, has advised us on the many difficult questions

which arise in connection with the conversion of the existing buildings to their new uses. Mr. R. L. Proudlock, Arboricultural Expert to the Government of Bengal, has also given us great help. It should be clearly understood that the plans and elevations for new buildings are merely preliminary sketches, which will be subject to alteration when they are brought under more detailed consideration.

3. A reference to Mr. Crouch's general plan (plate No. 1) will show that our aim has been to place the University buildings in the centre, and to group the various colleges around them in such a manner as to give easy access to them all. This involves a considerable alteration in the alignment of the roads which were designed to serve entirely different and much less complex conditions (see plate No. 2). The main idea of a broad central avenue with branching roads leading to the colleges and other buildings strongly commends itself to us. It brings the existing buildings into convenient and harmonious relation with the general scheme, and the extra expenditure which the plan entails will be amply repaid by the economy in space which it affords, by the increased accessibility which it secures, and by the more artistic design of which it allows. The present arrangements of roads would, if retained, prevent any systematic planning of the University, and when once the new buildings are erected, improvement will no longer be possible.

4. One of the most important questions for consideration, in connection with the foundation of the University, is the central establishment. A large house which should be centrally placed is necessary for the Vice-Chancellor, who must be able to receive visitors in a manner appropriate to the importance of the position which, it is hoped, he will occupy. Suitable rooms for the meetings, necessarily frequent, of Convocation, the Council and the various University Boards and Committees are required, and also convenient offices for the Warden and the Registrar and for their establishment. The Indian University is apt to be overlooked by the student; he regards it merely as an office, and the same view is too often taken by the professors of the affiliated colleges. To avoid this, the central authority should be made living and real, and the outward sign of this reality should be found in a stately building. Such a building fortunately offers itself in the new Government House (21 on the general plan and plates 4 and 5) the two portions of which are particularly well adapted by position, by appearance, and by the accommodation they afford for a Senate House and Vice-Chancellor's residence; we most strongly recommend that it should be used for these purposes.

Whilst the ball-room on the first floor of the new Government House will provide sufficient accommodation for ordinary meetings of Convocation, a larger hall will be needed for such special occasions as the conferring of degrees. The Curzon Hall (plates 16 to 18) in the Dacca College, which was specially built for large assemblies, should be used for these purposes, and should be placed under the management of the Council.

5. The chief centre of the University teaching will be in the Secretariat building, numbered 11 on the main plan. While the central portion and upper storey will be required for a college (as shortly to be explained), the remainder of the building can very conveniently be used for purposes of University instruction; it is proposed to accommodate in it the library and seminars and the Departments of Law and Islamic Studies. The manner in which the accommodation will be arranged is shown in plate No. 7. The laboratories, of which an account has been given in Chapter XI, are marked 12 on the general plan, and details are given in plates 9 to 13; there is ample space for further extension, when this becomes necessary. The anatomical laboratory (15 on the general plan) with dissecting rooms, etc., is placed on a site, apart from other buildings, but convenient to the general laboratories; a plan of the building is given in plate No. 14. A site has been selected for the small astronomical observatory (20 on the plan) which allows a view as free as possible in all directions. The Natural History Museum (19 on the plan) faces the laboratories along the main avenue; and the historical museum (5 on the plan) is located in the two old buildings mentioned in Chapter XI: photographs of one of these are given in plate No. 35.

6. The Dacca College (4 on the general plan and plates Nos. 15 to 21) will be rendered self-contained and complete by the removal of the Engineering School and laboratories. The existing hostel of this school (*c*) (which is being doubled in size by the erection of a second storey) will become a hostel of the college, and the school building (*e*) will be used for the same purpose. The present laboratory building (*d*) will provide accommodation for a lecture theatre and common rooms, but it will also be partly used as a hostel. In these various ways it will be possible to have in residence 500 undergraduates instead of 200 as at present, as well as about 40 graduates. A new dining hall and kitchen will be built where the small dining room of the Muhammadan students of the School of Engineering now stands. The quarters for servants are at present situated right in front of the old gate-house which is to be used for a museum; they should be removed to the site near the railway line on the opposite side of the road. A fifth hostel, to be attached to the Dacca College for the special use of Namasudras and other such students, is located in the site marked 23 on the plan. The only other important alterations which we suggest in regard to the Dacca College are the enlarging of the library in the main building (*a*), by throwing into it the rooms on the ground floor to its east (see plate No. 18), and the improvement, where possible, of the lighting of the lecture rooms.

7. The Jagannath College (13 on the general plan and plates Nos. 22 and 23) will occupy the present Government Press (*a*) which, with a little alteration, will be admirably adapted for the purposes of a college and hostel. The lower storey will be utilized for class rooms and other college accommodation, while the upper storey will make a fine hostel for 78 students, a superintendent and two junior

assistants. The houses to the west and east will be utilized for the Principal and one of the professors, whilst the buildings in the compound will serve excellently for a dining room, kitchen and servants' quarters. A new hostel will be built at (*b*) on the plan; its two L-shaped blocks will accommodate 260 undergraduates, 20 graduates and four junior assistants. This will suffice at the beginning; when more accommodation is required it can be readily obtained by building a third block joining, as shown in the plan, the extremities of the other two. The hostel will include quarters for two married officers, and dining halls, kitchens, servants' quarters, etc., will be provided.

8. The upper floor of the Secretariat building (11 on the plan and plate No. 8) will make an admirably light and airy hostel for the New College. It will accommodate 400 students and provide quarters for four Indian Educational Service officers and one Indian member of the staff. In the compound, continuing the line of the law school, large dining halls and kitchens will be built, and across the south-west side a row of graduates' quarters will be added; the effect of this will be to form a very pleasing quadrangle for the new college. Other graduates will be accommodated in one of the gate-houses. The lecture rooms, common rooms, etc., will be located in the centre of the ground floor of the main building; they are large and light and will form a satisfactory and self-contained block.

9. The Muhammadan College (18 on the plan and plates Nos. 24 and 25) will be a very important institution, especially as it will have to accommodate not only students following the ordinary courses of the University, but also those who belong to the Department of Islamic Studies; it is also likely to increase rapidly in size. A very fine central site has been chosen, so ample as to afford room for all possible expansion. The college and hostel will form a single building (*a*) which will be one of the most prominent and, it is hoped, one of the most beautiful features in the main group of University buildings. The college will contain a large lecture theatre, various lecture rooms, prayer room, common room, professors' room, library, etc., and will accommodate 220 resident students and 12 graduates. There will be quarters for an unmarried Indian Educational Service officer, a Provincial Educational Service officer and a maulvi. A large dining hall will be provided, and the requisite kitchen, servants' quarters, etc. When the college increases in size and a second hostel is built, some of the dormitory rooms in the original building will be readily convertible into additional class rooms. A suitable site and arrangement for the second hostel is shown at (*b*) on the plan.

10. For the College for the well-to-do Classes (22 on the general plan and plates Nos. 28 and 29) we propose a fine open site north of the Senate House and adjacent to the Ramna, as the station park is called. The buildings will form a prominent feature of this side of the University. The college building (*a*) will face the Senate

House, and the Hindu and Muhammadan hostels (*c*) and (*b*) will be built further away round a handsome sheet of water. Although the number of students will be small compared with other colleges, the main hostel will be a very large building, since it will contain a separate room for each student and quarters for a European and an Indian officer. The stables, which will be used for general University purposes as well as for the college, will be at (*d*), and the servants' quarters at (*e*). A house for the Principal will be built facing the Ramna, and another house for a European member of the staff to the south of the site marked 23. A riding school track [22*(f)* on the plan] may be provided for the use of the college and of the University at large.

11. The site of the Eden Ladies' College (*a*) and High School (*b*) is marked 1 on the general plan. We have not dealt with details of the school: for the plans and elevation of the college, see plates Nos. 26 and 27. The college and school will have separate entrances opening on to different roads, so that the former will not in any way interfere with the *parda* characteristics of the latter. In the college the science department has a separate entrance and can be shut off from the rest of the building. The site will suffice for the provision of ample accommodation and also for play-grounds; the whole will be enclosed by a wall. A house will be built for the Lady Principal in the north-east corner of the compound.

12. The College and School of Engineering will occupy a large site (No. 16 on the general plan) which can be so arranged as to keep the college [(*a*), (*b*) and (*c*)] and the school [(*d*) and (*e*)] well apart and to give both of them ready access to the workshops (*f*). The demonstration hall (*g*), for the special use of the college, will be situated close to a tank and to the power-house; the works office (17 on the plan) will be outside the compound, but in convenient proximity to the college. The college building (plates Nos. 30 and 31) will stand at the head of the main avenue, and will thus occupy the most prominent site in the University. Its architectural features have been designed with this idea in view, and the high plinth surrounded by classic columns in bold relief will afford a fine spectacle visible from one end of the University to the other. For the same reason the University clock tower has been made a part of this college, and will add greatly to the general effect. Students will be accommodated in separate rooms in the hostel (plate No. 32) which faces the southern bend of the road; a small separate hostel for Europeans (plate No. 33) and the usual dining hall, kitchen and other out-houses are provided. We have not considered in detail the school or the workshops; a plan of the demonstration hall is given on plate 33. The houses for European subordinates, several of whom will belong to the engineering staff, are situated immediately to the north of the school hostel, and the large site lying further north across the road may be utilized for the industrial institute, the third member of the technical group.

13. In the very centre of the University, lying between the Senate House and the University building, are two large gardens (9 and 10 on the general plan) which it is proposed to utilize for the Union (9) and the Professors' Club (10). The latter will be housed in the building which has hitherto been the residence of the Principal of the Dacca College, but which is now situated more appropriately for public than for private use. It will make an excellent club. For the Union a new building will be erected in the same style of architecture as the club and containing three large rooms surrounded by a wide verandah. The grounds will be used for tennis, etc., and, in view of their central position, should be tastefully laid out and carefully maintained.

14. The large and well-equipped gymnasium which we suggest (7 on the plan and plate No. 34) will be a very useful and important feature of the University; immediately to its east (site 6) there will be a good-sized open-air drilling ground for the performance of physical exercises in fine weather. Plate No. 3 shows the suggested arrangement of the college and University football and cricket grounds, and the location of the University pavilion and of the college sheds. The fives courts may also be erected at a convenient place in the playing-fields. The numerous tanks, which will afford abundant opportunity for bathing and swimming, should be maintained in good order and repair, and the two large tanks in the compounds of the Dacca and Muhammadan Colleges should be fitted with diving apparatus and used for sports and water polo.

15. We have discussed the housing of the staff in Chapter XIII. The residences may be readily distinguished on the general plan: those for officers of the Indian Educational Service and other European officers marked E, those for officers of the Provincial and Subordinate Educational Services marked I, and those for European subordinates marked E. S. Some convenient sites for new European houses have been indicated on the plan with the letter X; there are many spots on which additional quarters for Indian officers may be built; and, speaking generally, the University can readily accommodate as many members of the staff as for a long time to come are likely to need residences. To the north of site No. 23 are three houses built for clerks of the Government House establishment which may be used for the principal assistants in the University office.

16. We have included in our statement of expenditure an estimate, furnished by Mr. Proudlock, for laying out the grounds of the University. Dacca is very fortunately situated in this respect; fine trees flourish there, and with a little care and trouble good lawns may be made and kept green throughout the year. If, therefore, the grounds are well planned and carefully and neatly maintained, a beautiful setting may, without undue expenditure, be provided for the new University.

17. It is stated in paragraph 2 that we sought the advice of Major Clemesha, Sanitary Commissioner with the Government of Bengal, on the general question of

sanitation. He very strongly recommends, for reasons that are fully explained in Appendix IV, that an underground system of drainage should be constructed for the removal of sewage and sullage. The arguments which he adduced, and which have the full support of Mr. G. B. Williams, Sanitary Engineer, Bengal, appeared to us to be conclusive. We therefore asked that a scheme might be drawn up, and this has been done most efficiently by Mr. Williams, whose proposals, dealing fully with both water-supply and drainage, are contained in Appendix V. Water will be purchased from the Dacca Municipality, which has an abundant supply, and will be distributed throughout the University from an elevated reservoir holding 80,000 gallons (site marked 3 on the general plan). The sewage arrangements are so designed that eventually they may be linked up with the projected city scheme.

18. Apart from the small area to be served by the installation of the Engineering College, the University will take its electric power for lighting, fans, etc., from the company which has been formed to supply the city and station. Their power-house is located on the site marked 2 on the plan. Mr. R. J. Browne, Electrical Inspector, Bengal, has prepared the rough estimate for electric supply contained in Appendix VI. One point requires special notice. The mains must necessarily run along the central avenue: if they were carried overhead, the heavy posts and numerous lines would entirely spoil the appearance of the University: arrangements should therefore be made with the company to place them underground.

19. The upkeep of the roads and buildings of the University should, as recommended by the Engineering Sub-Committee, be entrusted to the Engineering College, with a proper office and staff of workmen, for which due provision has been made in the estimates. A committee has been appointed by the Government to maintain the grounds of the civil station and to supervise the staff appointed for this purpose: the same committee, with the addition of some representatives from the University, may be entrusted with the upkeep of the University grounds (other than the playing fields), one establishment being employed for the whole area. In this way all the heavy work will be done: in addition a *mali* might be allowed to each college for garden work.

20. The University will be practically self-contained in so far as ordinary municipal services are concerned: it will maintain its own roads and buildings; it will have its own sewage system and its own machinery for the distribution of water; it will supply its own road lights, obtaining its electric power from the general supply company; it can readily make its own arrangements for watering the roads and other miscellaneous services. In these circumstances it does not appear that the University will have much to gain by inclusion in the municipality or from the payment of municipal taxes, and we would recommend that an arrangement be made whereby the University will be excluded from the municipal administration and be permitted to manage its own internal affairs. The Council of the University will then be responsible for the due performance of municipal duties, which will ordinarily be carried out through the agency of the Maintenance Committee described in Chapter XXIV.

CHAPTER XXVI.

Cost of the Scheme.

Capital Expenditure.

An estimate of the capital expenditure required to give effect to our scheme is contained in Appendix IX.

The entries in the first section relating to new buildings are rough estimates calculated on plinth area, the rate for double-storied buildings being generally taken at Rs. 8-4. For dining halls and other main out-houses a rate has been allowed which will permit of the erection of buildings which will not spoil the general effect. The estimates for adapting existing buildings have been framed in greater detail by the Superintending Engineer. In this and other cases we propose, in preference to burdening our report with lengthy statements of minute details, to submit to the Government the estimates on which our figures are based. The total expenditure for buildings amounts to Rs. 32,36,000 made up as follows :—

	Rs.
Four Arts colleges	8,98,000
College for Women	1,50,000
College for Well-to-do Classes	5,17,000
College of Engineering	4,46,000
Laboratories and other Science Buildings ...	7,18,000
Gymnasium	1,01,000
Houses for officers of the Provincial Educational Service and Subordinate Educational Service and of European subordinates	2,90,000
Union	53,000
Shops	35.000
Hospital	16,000
Works office	10,000
Minor alterations in University Building ...	2,000

Due provision is made in the second section for sanitary fittings in both new and existing buildings : the estimates, which are approximate only, were prepared by the Plumbing Expert to the Government of Bengal.

It appeared to us that a reliable estimate of the furniture required for the various purposes of the colleges and the University could not be made without entering into considerable detail; we therefore appointed a sub-committee to consider this question, and the figures in the third section are derived from the elaborate estimates which they prepared.

Libraries and laboratories are the principal items under the head "Equipment" (Section IV). The figures are based on estimates prepared by the Library sub-committee and by the sub-committees for chemistry and physics, for biology, and for medical studies. The estimate for books is a modest one; we think that too great a sum should not be spent at once, and we have allowed a considerable annual grant (Rs. 15,000) for gradual additions. We also suggest that the initial expenditure of Rs. 1,82,000 should be spread over several years. It has been explained in Chapter XX that the Engineering sub-committee gave a lump estimate of Rs. 1,50,000 for furniture and other equipment, including museum and demonstration hall. Figures for the Natural History Museum were given to us by Mr. S. W. Kemp, Officiating Superintendent of the Indian Museum, for the hospital by Lt.-Col. E. A. W. Hall, Civil Surgeon, Dacca, and for the gymnasium by Dr. J. H. Gray of the Young Men's Christian Association.

The fifth and sixth sections do not call for further comment beyond that made in Chapters XXV and XV, and the estimates in the seventh section are sufficiently explained in Appendices V and VI.

2. The figures given in the seven sections of Appendix IX mount up to a grand total of Rs. 52,91,000. From this amount the following deductions should be made: Rs. 6,88,000 for the buildings, equipment, etc., of the College of Engineering, to be met from the sale-proceeds of Sibpur College; Rs. 6,08,000 for the College for the well-to-do classes, in pursuance of the suggestion that the cost should be defrayed from unclaimed landlords' fees; Rs. 1,50,000 from the proposed expenditure on the Muhammadan College, being the amount set apart from grants made in the past two years by the Government of India to meet the cost of a Muhammadan Hall. Making these deductions, there remains a net total of Rs. 38,45,000. If this sum appears to be remarkably small having regard to the objects to be achieved, it must be remembered that a magnificent site, large and costly buildings and a number of residences are already available; but for this circumstance the capital expenditure would have been double or more than double the figure given above.

Recurring Charges.

3. An estimate of recurring charges is given in Appendix X under the following heads: superior staff of the central administration. teaching staff, clerical establishment, miscellaneous subordinate establishment, menial establishment and contingencies.

The first two sections merely collate in tabular form the proposals made in various chapters of our report, and do not therefore require further elucidation.

4. The estimate for clerical establishment (Section III) was worked out by the Finance sub-committee in accordance with their suggestion that office work should be concentrated, as far as possible, in the central office. Most of the clerks will be employed on routine work, such as the posting of ledgers and details of accounts, while others, such as head clerks of offices and departments, will perform more difficult duties. The clerks should therefore be formed into two divisions, with separate recruitment, a clerk of the lower division being eligible for promotion to the upper division only if he shows that he is capable of doing more difficult work. The head assistant, the accountant and the cashier of the Registrar's office may be recruited independently of the rest of the staff, and should be granted, in the case of the first, Rs. 150—200, and, in the case of the two latter, Rs. 100—150, a month. The Vice-Chancellor should be allowed the services of a shorthand-typist on Rs. 75—100. Excluding these four special appointments, the proposals of the sub-committee work out as follows :—

	Upper division clerks.	Lower division clerks.
Colleges	6	11
Science	1	3
Medicine	1	...
Law	...	1
Islamic Studies ...	...	1
Library and seminars ...	...	2
Registrar	1	8
Warden	1	2
Health Officer ...	1	2
Works office	2	1
	13	31

The sub-committee recommend that the clerks should be graded as follows :-

Upper division.	Lower division.
3 at Rs. 100	6 at Rs. 60
3 „ 80	7 „ 45
3 „ 60	8 „ 35
4 „ 40	10 „ 25

The figures for miscellaneous subordinate establishment, contained in Section IV, have been collected from the reports of various sub-committees.

5. The Finance sub-committee prepared an estimate for the menial staff required for the Arts colleges, certain departments of University instruction and the University offices. Various other sub-committees assisted with similar estimates. The exact requirements in the way of menials for all the different branches of University affairs are not very easy to foretell; we believe that the provision made in Section V is a fairly liberal one, but it will doubtless require modification in detail. The statement includes general hostel servants, but not cooks and other servants connected with hostel messes whose wages will be paid from the mess funds. Provision is made for the upkeep of playing-fields, but not for the upkeep of the University grounds which we have suggested should be maintained by the general staff employed for the civil station. The staff of mehters would be much larger but for the proposed underground drainage system. The provision of syces is mainly for the students of engineering. Those amongst us who have been most intimately connected with the management of colleges lay great stress upon the need for respectable and neatly dressed servants; experience shows that dirty and untidy servants of doubtful respectability exercise a most prejudicial effect on the order and tone of a college. We have therefore suggested salaries which, having regard to the rates prevailing in Dacca, should serve to secure men of a suitable stamp. Bearers are given higher remuneration in the Science department, because they have to handle delicate apparatus and must be intelligent enough to be trained for this purpose; library attendants must also be men of some intelligence, and should therefore be paid at a higher rate than ordinary bearers.

6. The estimate of contingencies cannot profess to great accuracy in detail; it must be tested in the light of experience: for general charges we have made a careful review of probable expenditure, and in the case of science and other special departments we have, in general, followed the reports of the sub-committees.

7. The totals under the various main heads are as follows:—

	Rs.
Superior staff of the central administration ...	89,664
Teaching staff	8,54,840
Clerical establishment	31,512
Miscellaneous subordinate establishment ...	6,912
Menial establishment	46,944
Contingencies	2,68,844
Total ...	12,98,716

In order to ascertain the net additional expenditure to be incurred annually on our scheme, the following deductions must be made from the above total :—

(1) Rupees 3,45,696 on account of the annual income from fees, as given in Appendix VIII.

(2) Rupees 6,000 on account of miscellaneous sources of income such as fines, rent from shops, sale-proceeds of old stores, etc.

(3) Rupees 1,10,000, the estimated net cost of the Civil Engineering Department at Sibpur.

(4) Rupees 1,77,361, the net expenditure in 1911-12 on the Dacca College and Law College, met from Provincial Revenues.

(5) Rupees 13,200, the annual grant-in-aid made by the Government to the Jagannath College.

There will remain a net total of Rs. 6,46,000, a small sum with which to accomplish so much.

We desire cordially to acknowledge the services rendered to the Committee by the Secretary, Mr. Fraser.

R. NATHAN.
G. W. KÜCHLER.
RASH BEHARY GHOSE.
SYED NAWAB ALI CHAUDHURI.
SIRAJ-UL-ISLAM.
ANANDA CHANDRA ROY.
MOHAMED ALI.
H. R. JAMES.
W. A. J. ARCHBOLD.
SATIS CHANDRA ACHARJI.
LALIT MOHAN CHATTARJI.
C. W. PEAKE.
ABU NASR MUHAMMAD WAHEED.

Supplementary Minutes by Members of the Committee.

Minute by Nawab Siraj-ul-Islam, Nawab Saiyid Nawab Ali Chaudhuri, Shams-ul-Ulama Abu Nasr Muhammad Waheed and Mr. Mohamed Ali.

We are strongly of opinion that in the allotment of free studentships and stipends, a more liberal provision should be made for Muhammadan students. In urging this special concession we are not recommending any new departure in favour of the community or laying down any new principle. That the backwardness of the Muhammadans in the matter of English education, specially in Bengal, is due mainly to their general poverty has been universally recognized, and all authorities have hitherto consistently pressed the claims of the Muhammadan community in this respect for special consideration. The Education Commission of 1882 laid great stress on the necessity of providing Muhammadan students in schools and colleges with adequate pecuniary help, as they clearly recognized that poverty stood in the way of many a student as a strong barrier to education and chiefly higher education. Their recommendations were :—

"(8) that, where necessary, a graduated system of special scholarships for Muhammadans be established to be awarded (*a*) in primary schools, (*b*) in middle schools and tenable in high schools, (*c*) on the result of the Matriculation and First Arts Examinations and tenable in colleges ;

"(9) that in all classes of schools maintained from public funds , a certain proportion of free studentships be expressly reserved for Muhammadan students."

Some initial steps were therefore taken, and the result was the creation of a few scholarships for Muhammadan students which have gradually become quite out of proportion to the growing demand of the community.

It is clear that beyond the initial steps that were taken there has been no definite advance made in this direction, and we are bound to submit that full effect has not been given to the recommendations of the Commission. The leaders of the Muhammadan community have pressed this matter on Government from time to time, and the Muhammadan deputation that waited on His Excellency Lord Hardinge

on the 31st January last at Dacca had the privilege of representing the case very strongly before His Excellency. They said :—

"We also pray that, till such time as the Muhammadans do not come up to the level of the Hindus in the matter of education, a large separate allotment be made for Muhammadan education and be utilised in giving special scholarships to deserving Muhammadan boys, in providing free seats in hostels, in remission of tuition fees to poor Muhammadan students, and in such other directions in which special facilities for Muhammadans may be considered necessary."

To this contention additional strength has been lent by the Hindu deputation which waited on the Viceroy at Calcutta to protest against the creation of the Dacca University, on the 16th February last. The members of the deputation felt bound to concede that special facilities should be given to Muhammadan students to help the spread of Muhammadan education. They said :—

"The whole province will welcome the grant of special facilities for the spread of education among the Muhammadans in the shape of endowments and a more liberal award of scholarships."

This was fully endorsed by His Excellency the Viceroy who was pleased to observe as follows :—

"It may, as you suggest, be necessary to give special facilities to Muhammadans. The inadequate arrangement for the collegiate instruction of Muhammadans was emphasized by the Vice-Chancellor in his address to Convocation in 1909. I can only say that any proposal to this end which the new Governor of Bengal may take will receive the sympathetic consideration of the Government of India."

We are of opinion that a suitable opportunity has now presented itself to give effect to these recommendations and to fulfil the kind assurance given by no less a personage than His Excellency the Viceroy.

We have hitherto purposely refrained from suggesting what should be the measure of the grant, for we prefer to leave the point to be decided by the authorities with due regard to the increasing demands of the community. But we wish to point out that it would be a mistake to fix the grant on the basis of the number of students studying entirely at their own cost. Those who attend our schools and colleges without receiving assistance from Government represent that small section of Muhammadans who have been able to surmount the obstacle of poverty in their attempts to avail themselves of English education. It is not so much for them but for those who have been debarred from reaping the benefits of education by their indigent circumstances from continuing their studies that scholarships and stipends are most urgently needed. If poverty is admitted, as it has no doubt been universally admitted to be the main obstacle in the path of Musalmans of Eastern Bengal seeking higher education, the paucity in the number of those Musalmans who pay the entire cost of their higher education can only indicate the abundance of those who cannot

afford to do so, and, instead of basing the measure of Government assistance on the numbers already in the colleges, such assistance should vary in inverse ratio to the numbers. We, therefore, submit that the needs of the really deserving portion of the whole population, and not the numbers attending colleges, should afford the basis for organizing an extended grant of stipends for Muhammadan students.

The Government of Eastern Bengal and Assam granted a number of special senior scholarships specially for Muhammadans. But although a great improvement on the entire absence of such special facilities for Musalmans before the new province came into being—and apparently none too few in number at a time when Musalman undergraduates in the colleges of Eastern Bengal were far from numerous—they were even at the time wholly inadequate for the needs of the community and are now quite out of proportion to the growing numbers of Musalmans attending colleges in Eastern Bengal. To take one instance only, there were on the 31st March 1907 only 13 Muhammadan students in the Dacca College, but in August 1912 they numbered no less than 171. We are glad that the committee has altered the system of granting special facilities to Musalmans which the Government of Eastern Bengal had followed. The substitution of stipends to those Musalman students who need them for the scholarships specially offered to the most meritorious among Musalman students, irrespective of their needs, will give to the remaining scholarships, which will now be competed for by students of all communities without any discrimination or preference, the honour and distinction which is of more importance than their monetary value, and it will at the same time prevent the special facilities granted by Government to the Musalmans on account of their poverty from being given away in some cases to such of them as have no need of them, to the exclusion of some others that may need them badly.

The committee have suggested that a sum of Rs. 300, which we consider quite inadequate, be allotted for distribution to Muhammadan students in the senior classes of Arts and Science departments. The committee, for reasons explained in paragraph 8 of Chapter XII, did not suggest any figure for stipends in the junior classes. These however, standing as they do at the gateway to higher education, are the more important class, and it is essential that liberal provision should be made for them.

We find further that no facilities in the above shape have been offered for the study of medicine and engineering. These branches of study being most expensive, the Muhammadan students require greater encouragement. A liberal aid in the shape of stipends is necessary to enable Muhammadan students to take advantage of the institutions provided for the study of medicine and engineering. Unless substantial aid is given in the shape of stipends it will be very difficult to attract students for the medical and engineering professions which at present include only an infinitesimal number of Musalmans.

Only two law scholarships of the value of Rs. 10 are provided for Muhammadan students in the Dacca University. This number, we believe, is quite inadequate.

As regards free-studentships, 18 only are allowed in the Muhammadan College and 18 in the Jagannath College. We consider this number also to be wholly insufficient for the requirements of the community.

SIRAJ-UL-ISLAM.
NAWAB ALI CHAUDHURI.
ABU NASR MUHAMMAD WAHEED.
MOHAMED ALI.

Minute by Nawab Siraj-ul-Islam, Nawab Saiyid Nawab Ali Chaudhuri and Shams-ul-Ulama Abu Nasr Muhammad Waheed.

We are in favour of a separate matriculation examination for the Dacca University, on the lines indicated in Chapter V, paragraph 3, of the report.

2. We think, with reference to paragraph 7 of Chapter XXIV, that there should be at least three specially nominated Muhammadan members of the Council.

SIRAJ-UL-ISLAM.
NAWAB ALI CHAUDHURI.
ABU NASR MUHAMMAD WAHEED.

Minute by Nawab Siraj-ul-Islam and Nawab Saiyid Nawab Ali Chaudhuri.

Whilst we agree with the rest of our colleagues that the teaching and residential is the highest type of University, yet we see no reason why such a University

should not also have colleges affiliated to it which are situated outside the University town, thus combining the teaching and residential and the federal types. We think that this should be the case at Dacca, and we record these remarks lest there should be any misapprehension as to our attitude in the matter. We should also like it to be understood that, although we are of opinion that the new University would accomplish even greater good if the colleges of the eastern districts of Bengal were affiliated to it, yet we believe that, as the scheme stands, it will be of immense benefit to those districts and to the large Muhammadan community which dwells in them. In especial we lay emphasis on the scheme for a Department of Islamic Studies, which will, we are confident, be an immense boon to the people.

SIRAJ-UL-ISLAM.
NAWAB ALI CHAUDHURI.

Minute by Mr. Mohamed Ali.

WHILE concurring with my colleagues so far as a large portion of our report is concerned, there are certain questions on which I beg to differ.

Scope and Territorial Limit of the Proposed University.

2. In Chapter I of the report the development of the University system in India has been described in some detail, but it seems to me that sufficient allowance has not been made for the radical change that is contemplated by the Government in the creation of the Dacca University. It is of importance to note that the type of the federal University in India was adopted and preserved, as the report says, not because it inspired any particular admiration or affection. Under the conditions then prevailing in India it was regarded as the only possible scheme, and it was only when a large college was established in Aligarh, to which after a time students began to flock from all parts of India, drawn thither by certain distinct ideals and aspirations, that it appeared possible to the educationists in India to consider whether a better type of University could not be established in this country also. It is a truism that India is not a country but a continent, and as English education has been confined to a very

microscopic minority of the Indian population, it was difficult enough even in a federal University to have numerous colleges with a sufficiency of under-graduates where higher teaching could be centred. To some extent these conditions have changed, and are still changing, because distance is being annihilated by the improved means of communication and a growing percentage of Indians is being attracted towards higher education. But this transformation has been gradual and not sudden, and the development of Indian Universities, while keeping pace with this transformation, should not outstrip it. I submit that we have not yet reached a stage at which the federal type of the University can entirely be dispensed with, and, although there is no likelihood of the existing Universities being abolished in the near future, I submit that we are not justified in discarding the federal system altogether even when an educational centre like Dacca makes it possible for us to gather together a fairly large number of undergraduates. The Government of India in their letter No. 811, dated Simla, 4th April 1912, addressed to the Government of Bengal, said that "it is eminently desirable that these (new Universities) should be, where possible, of the teaching and residential type, binding together the colleges of a single town or a single circumscribed area." These limits were narrow enough, but the Government of Bengal in their Resolution No. 567 T.—G., dated Darjeeling, 27th May 1912, have circumscribed the area still further by laying it down that the new University at Dacca "should not include any college beyond the limits of the *town*." Apart from the inability of such a University to remove the acknowledged congestion of the Calcutta University with its 52 affiliated colleges, 13,375 students, the 600 recognized high schools for boys with over 150,000 male pupils within the provinces which it serves, and its 14,460 candidates examined in 1911 in various standards ranging from the Matriculation to the Mastership of Arts, there is also the question of the development of higher education in the eastern districts of Bengal which, with Assam, had been formed into a separate province in 1905, with the result of improving the rate of their educational progress in a remarkable manner. I therefore submit that it would have been better if the territorial jurisdiction of the Dacca University had not been so rigidly defined. It was possible to frame a scheme for the new University making it a teaching University for the colleges located in Dacca and a federal University for those situated in the neighbouring districts of Eastern Bengal which could be more conveniently stimulated and supervised from Dacca than from Calcutta. This would have involved no radical change while allowing full scope for the development of the teaching University. As it is, it would be very odd to confine the beneficence of the Dacca University to the colleges located in Dacca while allowing far off Calcutta to control the existing college at Mymensingh, or a college that may before long come into existence at Narainganj. If the districts of Eastern Bengal were for political reasons denied the benefit of a separate administration, they could well have been given a separate University as some sort of compensation; and when His Excellency the Viceroy first announced the proposed creation of a University at Dacca, hopes were

entertained by a large section of the Eastern Bengal population that the territorial jurisdiction of the new University would be the same as that of the administration which had come into existence in 1905.

The terms of the Resolution of the Government of Bengal precluded discussion of the question of the territorial jurisdiction of the proposed University, and, that being the case, the Committee is not justified in expressing an opinion likely to give rise to the misapprehension that its members are agreed on the subject of making the Dacca University a purely teaching institution having jurisdiction only over the colleges located in the town of Dacca. I submit that in view of the prevailing conditions in India which, although they are changing, cannot suddenly disappear, the new Universities to be located in large educational centres should be teaching Universities in respect of local colleges and federal Universities in respect of colleges situated in neighbouring districts which are nearer to the seat of the new University than to the seats of existing federal Universities. These remarks apply only to territorial State Universities, and not to communal Universities in which the unity of ideals is likely to be a greater force for uniting scattered populations belonging to the same community than the disintegrating force of material distance.

The Ideal Scheme of a Teaching University.

3. I am not in a position to judge why Government defined the territorial jurisdiction of the proposed University of Dacca so rigidly as to deny the Committee an opportunity of discussing the question whether it could not frame a scheme for a University such as I have discussed above, teaching its alumni in the locality in which it was situated and supervising the work of colleges in the neighbouring districts affiliated to it. I am nevertheless of opinion that, however necessary such a type of University may be as one of the stages in the evolution of the ideal University, the ideal University is no doubt a teaching and residential University. In confining itself, as the Government desired, to framing a scheme for a purely teaching University, the Committee has therefore concerned itself with the ideal more than with the needs of the situation in Eastern Bengal; but where a great deal of latitude was given to the Committee by the Government, it has allowed an excellent opportunity to pass without framing the ideal scheme for an ideal University. And in contracting its vision the Committee has not kept in view local conditions of Eastern Bengal so much as the existing conditions of the Western half of the Province. Education can best be viewed as a whole and not in compartments, and I submit that the essential mistake of recent endeavours to improve the character of education in India has been that excellent superstructures have been designed without due regard for the character of the foundations. The Universities Commission of Lord Curzon could not concern itself sufficiently with the character

of the education imparted in the schools, and the same policy has been followed in defining the scope of the Dacca University Committee's deliberations. But although the Committee could not enter into the details of the educational system of our schools generally, it was possible for it to recommend to Government that a new line of demarcation should be drawn between the schools and the colleges in order to make the scheme of the Dacca University ideal. There is a general complaint that students of immature age and unsuitable education are admitted into colleges where, instead of their being lifted up to the plane of the ideal lecturer, the lecturer is forced to step down to their own lower level. The chief remedy hitherto suggested has been the fixing of a higher age limit for passing the Matriculation or the Entrance Examination, which could have no other effect than that of arresting with a sudden jerk the mental development of the more intelligent schoolboys. I submit that the proper method of adjusting the levels of the lecturer and the students is to add one or two years to the education imparted in the schools, and to take up collegiate education from the stage signified by the second or third year of an undergraduate's education under the existing system. A three years course for Pass and for the majority of honours students would suffice to carry on the development of the undergraduates to a stage higher than is reached under the existing system at the time of graduation. At present a period of about ten years is spent in the school and of four years in the college, after which a student takes his B.A. degree. The result is that a period of 14 years is required for an Indian to obtain the B.A. which is not considered equivalent to the B.A. in England, and only a small fraction of Indian students complete their collegiate education by taking the M.A. degree. The system of demarcation between the school and the college at the Matriculation which can be passed at the age of 15 or 16 is at best wasteful, as highly paid professors have to teach undergraduates who in England would be considered schoolboys both in age and mental development. But at its worst—which is only too often the case, as the large percentage of failures clearly indicates—it happens that under this system schoolboys of unripe years and immature minds who are unable to bear the strain of college lectures, the mental diet proving too heavy for their constitutions, leave the college, at the end of 14 years spent at school and college, with a docked education and a stunted mental growth, their minds showing curious precocity in certain directions and an astonishing feebleness in others. The Committee proposes to have a Pass School and an Honours School for the B.A., which is a great improvement on the existing systems. But I submit that, if the B.A. degree is not to be the apex of the educational system, in the ideal University there should be many more than 150 post-graduate students to a total of 2,100 undergraduates, or 940 undergraduates studying the senior course, exclusive of women and the "well-to-do classes," as the Committee expects to have in Dacca. If, instead of the existing system, school education goes on for 11 or 12 years, and a student is admitted into a college at the age of 17 or 18, and studies therein for 3 or 4 years, the honours man taking his degree generally at

the age of 21 or 22 years, it would be possible to adjust satisfactorily the levels of the college or University lecturers and the undergraduates and to give to the majority, instead of a very small minority, the benefit of a complete education. Apparently the same result is reached at the same age in the existing system; but a complete education is the portion of only a small fraction of those who study for the M.A., doing so oftener on account of the market-value of the higher degree than with a view to complete their education—and in the process many an intellect gets warped, and much needless cost is entailed, because the teaching is not always suited to those who are taught, and the teachers are paid higher salaries in the colleges than school masters who are really required for the purpose would ordinarily receive. In the Dacca University we could have done well by starting with a clean slate, beginning collegiate education after the first or second year of the present system of collegiate education, providing a three to four years' course for the B.A., for all undergraduates, and altogether dropping the M.A., which is at present the luxury of only a few. But such an arrangement could not have fitted in with the Calcutta University, nor pleased its powerful advocates and supporters. The ideal scheme was rejected and, what is worse, the Calcutta Matriculation has been decided upon as the sole test of fitness for admission into the Dacca University, while another, and a still more disastrous, step has been taken by permitting undergraduates of the Calcutta University to join the Dacca University after passing the Intermediate Arts Examination. In other words, the Dacca University scheme begins only with the B.A. and provides higher education of the new type only for two years for the large majority of students and four years for the small fraction that may proceed to the M.A. degree. Thus not only has school education been left where it stands to-day, but the first two years of collegiate education under the present system have also been left in their existing condition. Thus restricted and confined, the scheme which we have worked out is far from ideal and certainly not in keeping with the desire to establish an ideal teaching University in India. In my humble opinion, while the Committee has paid scanty regard to the needs of the eastern districts of Bengal in their desire to achieve the ideal, it has shrunk from pursuing that ideal steadfastly and made its achievement impossible, because they have paid too great a deference to vested interests in Calcutta. Judged as a remedy for the complaints of the eastern districts of Bengal, the Committee's scheme is too idealistic; but judged as an experiment in providing an ideal University, it has not been sufficiently bold. Even if the disproportionately little regard for the needs of the area in which the new University is to be located can be condoned because the utilitarian aspect must be subordinated to the artistic, what is there to justify the yoking of the better to the worse as has been done with regard to the Calcutta Matriculation, the admission of undergraduates after the Calcutta I.A. to the B.A. course at Dacca, and the affiliation of the Dacca Law Department to the Calcutta University? It is clearly inartistic, and it has not even the saving grace of being utilitarian from the point of view of the people of Eastern Bengal.

The Matriculation Examination.

4. As regards the examination which should take place to test the qualifications of candidates seeking admission into the Dacca University, I hold the view that it would be reasonable that the Dacca University should hold a Matriculation Examination of its own, specially as the great majority of boys from the Dacca schools will enter the Dacca University and not the Calcutta University, and will form the bulk of the recruits of the new University. It is also desirable that there should be a close connection between the Dacca University and the numerous schools of the Dacca town, and that full advantage should be taken of the existence of the University at Dacca to improve the Dacca schools through the influence of that University. In view of the fact that the Dacca University would have no jurisdiction outside the town of Dacca and schools situated outside these limits would have to follow the Calcutta course and send up students for the Calcutta Matriculation, it is not unreasonable to recognize in the case of such students the Calcutta Matriculation as a qualification making its possessor eligible for admission into the Dacca University; and under the circumstances it appeared more suitable to make the Dacca Matriculation a Junior Scholarship Examination on the results of which the Dacca University junior scholarships could be allotted and candidates who had failed to get scholarships, but who nevertheless exhibited a standard of attainment adequate for entering into the University, could be declared eligible for admission to the colleges of the Dacca University, every college having full discretion to refuse admission to any eligible candidate. For reasons which I have been unable to understand fully, a majority of the Committee has decided to give up the idea of a Scholarship-*cum*-Matriculation Examination of the Dacca University and simply to accept the Calcutta Matriculation. But I still prefer the original suggestion, and would like to place on record the opinion I expressed in the course of a discussion on the subject in the 15th meeting of the Committee on the 9th July 1912. It would be anomalous for one University, while holding no Matriculation Examination of its own at all, to accept that of another and presumably an inferior University. I have already said that, as the bulk of the recruits for the new University will come from Dacca schools or from schools in the eastern districts of Bengal, a separate Matriculation is both reasonable and desirable. But I may add that as not many of the recruits for the new University would come from other schools, it would not matter much if they passed only the Calcutta Matriculation, which may remain an alternative, though not the sole, test of eligibility for admission into the Dacca University. Nevertheless I am strongly of opinion that preference should certainly be given to students from Dacca and the eastern districts of Bengal; for the Dacca University is not only to be an educational experiment, but is intended by Government to benefit the eastern districts of Bengal in particular. From an educational point of view also it is essential that those who are to teach the students in the University should test the latter's ability to follow profitably the lectures which they will be required

to attend. Had the Matriculation been, like the School Final Examination now held by the Local Governments in several provinces of India, the culminating point and final test of a secondary education fairly complete in itself, I could subscribe to the principle enunciated in Chapter V of the Committee's report that the Entrance test must be based on the course followed in the schools. In my humble opinion an Entrance Examination is what its name signifies, *i.e.*, the test of eligibility for entrance into a University, and as such it should be directed to test whether a candidate can profitably follow the lectures he will be required to attend in the University, rather than to test whether he has profited from the study of several years in a school. I have already referred in passing to the disastrous step which, in my humble opinion, the Committee has taken in permitting undergraduates to join the Dacca University after passing the Intermediate Arts Examination of the Calcutta University. This has made it necessary to make the Intermediate course of the Dacca University practically the same that is prescribed by the Calcutta University. But if in future it becomes necessary to retrace this step, the Dacca University would be unable to depart to any appreciable extent from the Intermediate course of the Calcutta University if the latter is permitted to prescribe the course which candidates seeking admission into the Dacca University are to study in the schools. Finally, it is very desirable that the Dacca University should have some influence on school education, and this could not be done without a separate Matriculation Examination, which may be different, but not necessarily more difficult, than that of Calcutta. It appears to me somewhat odd that, while the Committee accepts the Calcutta University as the proper authority to prescribe the course of studies for the schools and to examine the students at the end of their school career, it should recommend that the inspection and recognition of schools in the town of Dacca should lie with the Dacca University instead of with the University of Calcutta. Mere inspection, even if permitted, would not have the desired result. For that the power to prescribe the course of studies for the Matriculation candidates and to examine them is essential.

Legal Studies.

As regards the compromise arrived at by a majority of the Committee in relation to the teaching of Law at Dacca, I regret to have to say that its chief, if not sole, merit will be, as the report says, that it "will go far to satisfy those eminent authorities who viewed with grave concern the proposal to cut Law teaching at Dacca adrift from Calcutta." The eminent authorities referred to are, or at least were, altogether opposed to the continuance of legal studies at Dacca even though these studies commenced as far back as 1864. It would repay the labour of perusal if the minutes of the various meetings of the Committee were read in conjunction with the Report, for although the latter contains the final compromise, it says very little about the merits of that compromise, and I submit that a reference to the discussion which took place before it was arrived at would deprive it of what little

there appears to be to recommend it. It is indeed difficult to discuss the compromise without having to reproduce the arguments used for and against retaining the Law Department at Dacca and placing it under the Dacca or the Calcutta University, and this would require more time than I have at my disposal at present, besides swelling this note to a disproportionate size. So far as the teaching of Law as a University course is concerned, the Dacca University would make a better provision for it than has yet been made in the Calcutta Law College. No doubt in Calcutta there is the advantage of a large number of practising lawyers who can utilize their leisure in giving lectures at the Law College; but it is not so easy to induce practising lawyers of any eminence in their profession to devote any time to teaching Law for the small allowances offered by the Law College in Calcutta. What little experience I have been able to gain in the course of my residence in Calcutta for two years leads me to say that in the majority of cases lecturers at the Calcutta Law College are not men of great eminence in their profession; so that it would be safe to say that competent and well paid whole-time professors, such as the sub-committee for the teaching of Law at Dacca and the Dacca University Committee have suggested, would be able to impart a better legal education than is at present imparted in the Calcutta Law College. All this may, however, be considered beside the mark when it has been decided by the Committee to retain Law teaching at Dacca. But it is difficult to dissociate from one's mind objections such as were raised during the discussion of the Committee to the retention of Law teaching in Dacca when discussing the question whether the Law Department for the Dacca University should accept the Calcutta University as so far superior to it as to permit it to prescribe its course of study and examine candidates sent up by the Dacca University for examination. On the merits of the teaching of subjects in the two Universities, the superiority would seem to lie with the Dacca University, and the expenditure to be incurred at Dacca in this connection can be considered wasteful only if we regard the centralization of Law teaching to be more important than the convenience of Eastern Bengal students and the completeness of the Dacca University. I understand that an effort was made ere this to centralize all legal studies at Calcutta; but in view of strong protests in Eastern Bengal and Bihar, the Law College at Dacca was retained and a Law College was established at Patna also. This point, however, has been given up by one of the eminent authorities to whom reference has been made in the report, and it has been contended that what is required is a centralization in the control of legal education rather than a centralization of Law teaching. This brings us to an important aspect of the question. It has been pointed out that Law degrees in this country, unlike such degrees in Oxford and Cambridge, are not mere matters of academic distinction, but are passports for the legal profession. That being the case, it is necessary to conform not so much to the ideals and opinions of the authorities of the Calcutta University as to those of the Calcutta High Court with whom the

control of professional legal education in Bengal lies. In so far as admission to the Bar is concerned, the Calcutta University is an instructing and examining agent for the Calcutta High Court, and there is no reason to believe that the Calcutta High Court would object to exercise the same control at Dacca through the agency of the Dacca University as it exercises at Calcutta through the agency of the Calcutta University. There are already 18 M.A., B.L.'s of the Calcutta University residing in Dacca, in addition to three Barristers with English degrees; and with the staff proposed by the Committee for the Dacca Law College and some members of the Indian Civil Service, like the District and Sessions Judge and the District Magistrate (if he happens to be a Barrister), they could form a fairly efficient board of legal studies which could from time to time receive the assistance of the members of the Bench and Bar of the Calcutta High Court. It is therefore only for the Calcutta High Court to say whether it would agree to the establishment of two different agencies for the purpose of instructing and examining candidates seeking admission to the Bar. If, however, the centralization of the control of legal studies is to be our ideal, the proper course would be to permit every Indian University to make whatever provision it chooses for instructing those who seek to gain its academic distinctions in Law, and to provide, not an avenue for admission into the legal profession in each province, but only a single gateway for such admission throughout India, like the British Inns of Court. In this country one of the greatest obstacles in the way of improving the character of University teaching has been that University degrees have been regarded too much as passports to Government service and to various professions and too little as the guinea stamp of a liberal education. I have already referred to the desirability of dissociating the Matriculation examination of an Indian University from the School Final examination held by Government, which may be regarded as a passport to certain offices under Government or as a qualification for admission into certain professions. As regards the higher examinations, it would probably be necessary to institute a modified system of Civil Service Examinations as in England. But it should present no difficulty if a central institute, established at Delhi, were to examine candidates for admission into the Indian Bar as is at present done by different High Courts examining candidates for pleadership for different provinces.

Islamic Studies.

5. As regards the Department of Islamic Studies, I am glad to note that the prolonged discussions, both in the General Committee and in the sub-committee appointed for Islamic Studies, have resulted in a scheme which has received the meed of approval from eminent scholars like Nawab Imad-ul-Mulk Syed Hosain Bilgrami, C.S.I., C.I.E., and Dr. J. Horovitz. A course of Islamic Studies may be provided for in a University with two objects in view. It may be provided for with

the object of educating a number of competent theologians and divines to satisfy the spiritual and social needs of Musalmans, or with the object of turning out cultured Musalmans thoroughly familiar with the doctrines of their religion and imbued with the culture of Islam, and at the same time fully competent to take their place in the world. Both these objects are highly desirable in themselves, but it needs no mention that the first can form no part of the duties of a Government, such as our own, which has hitherto remained uncompromisingly neutral in religious matters. That being the case, it is the duty of the Musalmans themselves to make due provision for producing a sufficient number of theologians and divines to satisfy their social and spiritual needs. Besides, if our Government took this duty also upon itself, there is some likelihood of misconceptions being created as to the real object and intention of Government. I have therefore always viewed the suggestion of the Government of India that a department of Islamic Studies may form part of the Dacca University as prompted by the desire to encourage the rapid increase in numbers of ordinary Muhammadan citizens, religious and cultured, and at the same time competent to sustain the struggle of life on even terms with their fellow-subjects of other communities. Viewed in this light, the suggestion is eminently appropriate for the eastern districts of Bengal, because a very large percentage of the population of literate people in that area is attracted far more by Arabic and Islamic studies than by English and western education. At present no provision exists for enlightening these people, except the existing madrasahs, some of which owe their maintenance to State assistance. But so superficial in content and old-fashioned in method is the education imparted in these madrasahs that they succeed in turning out neither competent preachers and divines of the Islamic faith nor qualified citizens of the Empire. I trust I shall not be considered guilty of Philistinism if I give prominence to the economic aspect of the matter. At a time when the industrial organism of society in every community needs the services of every one of its members as productive units, the alumni of the madrasahs of Bengal are not only excluded from the ranks of the producers of the country, but add a whole horde to the already swelled ranks of its indolent consumers. I have no desire to generalize so largely as to ignore the possibility that some of these may be men of spiritual qualifications and mundane competence, or both. But, if any generalization can be safe, it may safely be stated that the present-day madrasahs in Bengal far from being a blessing to the Government or the people are a source of injury to both. What the people of Eastern Bengal need is a much more general diffusion of modern learning, and to my mind it would be as great a merit of the Department of Islamic Studies that it would provide a half-way-house to this goal, as the preservation of a learning which is apt to be neglected in the hurry and bustle of modern times. But in order to do this, it is essential to hold out worldly attractions before the Musalmans of Eastern Bengal, from whose ranks we hope to secure the students for the Department of Islamic Studies in the University of Dacca. Whatever may be the defects of the existing madrasahs, they provide a two-fold attraction for the people of Eastern Bengal.

Just as in the age of feudalism and territorial aristocracy in Europe, a landless serf could improve his social status by entering the Church; one of the so-called *Ajlaf* of Eastern Bengal can to this day enter the ranks of the so-called *Ashraf* by studying at one of these madrasahs and emerging therefrom after securing the "Turban of Superiority." But even if only a poor livelihood could be eked out of the profession of preaching or leading prayers in the mosque, many of the alumni of these madrasahs can console themselves with the notion which they entertain that, whatever their environments in this world, they secure for themselves better surroundings in the next. It is obvious that we can no longer tolerate the existing madrasah system; but if it is to be modernized, we must remember that the degrees which we propose to confer in the future will not have the same sanctity as the distinctions conferred by the madrasahs in their existing and unreformed state. We should therefore offer greater prospects of worldly advancement to those who would secure our degrees than are at present held out to a prospective preacher; and although this suggestion may appear wholly superfluous in view of the clear opinion of the Committee that the degrees of B.I. and M.I. ought to be regarded as equivalent to the degrees of B.A. and M.A. for Government employment and admission to the B.L. course, I submit that the Committee could have ensured the desired result if it had absorbed Islamic studies in the general Arts course of the University as it has done in the case of some science subjects. In my humble judgment the distinction between Islamic studies and western education is capable of being exaggerated, and such exaggeration is likely to keep the one divorced from the other even in the Dacca University, as it has hitherto been in other State Universities of India to the injury of both. The course prescribed for Islamic studies is not very different in content from what was regarded until a generation or two ago by the Musalmans throughout the world as providing the best liberal education for a Muhammadan gentleman, and, except for the introduction of modern science in the western curriculum, there is little to distinguish Islamic studies from modern western education if the method of imparting education remains the same in both. For example, the same faculties have to be used much in the same way in interpreting the *Koran* as in interpreting a modern book of law or literature, and the *Hadis* or the traditions of the prophet of Islam requires the same critical study as the life and work of a statesman, king or philosopher. In my humble judgment the complete separation of Islamic studies from the ordinary Arts course creates three apprehensions: Firstly, the method of teaching Islamic subjects may remain almost as old-fashioned as before, instead of being thoroughly modernized. Secondly, the status and prospects of those who teach Islamic subjects in the University may not approximate to the status and prospects of those who teach other subjects in the University. Thirdly, the prestige and prospects of those who receive the degrees of B.I. and M.I. may not approximate to the prestige and prospects of those who receive the degrees of B.A. and M.A., or B.Sc. and M.Sc. I have been assured by those members of our Committee who opposed the complete absorption of the

Islamic studies in the Arts course that none of these results are likely to happen, and nobody would be more pleased, if this prediction comes true, than myself. But to my mind the matter is of too great an importance and involves the risk of failure of too excellent a scheme to be left to mere predictions. If, however, it is too late now to permit Arts students to substitute a subject included in Islamic Studies for an alternative Arts subjects and similarly to permit undergraduates taking up Islamic studies to substitute a Science or Arts subject for one of those included in the course of Islamic studies—though I do not think it is even now too late—I think it necessary to submit that, at least for the present, the degrees conferred on successful students after a course of Islamic studies should be called B.A. and M.A., instead of B.I. and M.I. I strongly hold that the reputation of an individual and a degree must depend in the long run entirely on their own merits. But there is such a thing as an unmerited initial prejudice, and I apprehend that such a prejudice may exist against those who obtain the degrees of B.I. and M.I. until such time as the possessors of these degrees can establish their reputation. Government may accept them as equivalent to the degrees of B.A. and M.A., but it is not always possible to affect by means of Government edicts the ideas and notions of individual officers from whose individual discretion in matters of State patronage there is no appeal. If there is such a thing as a "good-will of the business," which has a monetary value, and if labels and trade-marks are matters of importance in business, I submit that the hall-mark of University degrees is a matter of sufficient importance to merit careful consideration. If after a long and arduous career in the Islamic Department of the proposed University, a student, in spite of equal qualifications, is unable to compete on equal terms with the holders of the degrees of B.A. and M.A. in the matter of State patronage, it is certain that his disappointment will react on the popularity of the Department of Islamic Studies itself, and a fairly costly scheme would end in comparative sterility and failure. The titles conferred by the Oriental Faculty of the Punjab University have now proved of little value in attracting the best Muhammadan students and in encouraging the study of subjects which the Faculty was designed to preserve and improve. Sir Saiyid Ahmed Khan had all along predicted this and had opposed the creation of a similar Faculty in the Allahabad University. The Committee has certainly improved on the scheme of the Punjab University by including English as one of the subjects in the course of Islamic studies and maintaining the same standard of English in this course as in the ordinary Arts course. But I submit that the danger of failure is not entirely removed even now, and it would be too much to risk the failure of the scheme merely for the sake of providing a scientific nomenclature for the degrees of the University at its very commencement. I would therefore strongly urge that the Islamic studies should be absorbed in the Arts course, and, failing that, at least the same designation should be given to the two degrees for the present. I may add that Nawab Imad-ul-Mulk Syed Hosain Bilgrami, C.S.I., C.I.E., agrees with me in the matter of the nomenclature of degrees.

The Administration of the University.

6. There is one more point on which I should like to record a separate opinion. This relates to the administration of the University. I recognize that the Committee has dealt fairly in principle with the various interests concerned, but inasmuch as the Convocation would be a purely deliberative and legislative body, the representation of non-official members on the Convocation provided in the report is inadequate. In a body of about 140 members there would be only 40 elected and nominated graduates and about 14 or 15 other non-official members, and there is a great danger that the voice of the community at large would not be sufficiently strong. I would therefore suggest that 5 to 10 more non-official members should be provided with seats in the Convocation. Similarly, the Musalmans would be inadequately represented by 15 elected and nominated graduates, specially when no proportion is to be fixed for the community in the 21 persons to be nominated by the Chancellor. For a long time to come the Muhammadans will find themselves in a hopeless minority among the professors, all of whom are to have seats in the Convocation, and they are unlikely to win any appreciable proportion of the seats thrown open to election by the general body of registered graduates. In view of these facts, I submit that seats on the Convocation should be provided for at least 25 Muhammadan graduates, and it should be laid down that no less than 10 persons to be nominated by the Chancellor should be Muhammadans. It must be remembered that the Moslem population of Eastern Bengal is 75 per cent. of the total, and if the present backwardness of the Muhammadans in western education is to be used as an argument for giving to the community a smaller representation on the Convocation of the Dacca University, we shall to a great extent be perpetuating the same deplorable condition which the Dacca University is intended to change. With reference to the nomination of 10 Muhammadan graduates resident in the provinces of Bengal and Assam, although the Committee clearly indicates the reason why the retrograde system of nomination has been recommended, I submit that it was possible to get over the difficulty by creating for the next 10 years or so an electorate of all Muhammadan graduates in the eastern districts of Bengal and Assam. The system of election has an educative value of its own, and more interest is certain to be displayed in the progress of the University if elections take place than would be the case if the additional 10 graduates are to be nominated by the Chancellor. As regards the Moslem representation in the Council, the case is still worse; for on a Council consisting of 20 members a minimum of two Muhammadan members is quite inadequate; and in view of the fact that not a single Principal of the incorporated colleges is at present likely to be a Musalman, and the same is to a great extent true of the six professors to be appointed by the Chancellor, I submit that not less than three out of the six members to be elected by the Convocation should be Muhammadan. I regret to note that some of the members of the Committee oppose even the minimum number of two Muhammadan members, but in view of the fact that the principle of special representation for the Muhammadans is recognized even

by them in the case of the Convocation, it is difficult to understand the reason which prompted these members of the Committee to oppose special representation for Muhammadans on the Council. As a matter of fact, if the Council is to have much larger executive powers than the Syndicates of existing State Universities, I submit that an adequate representation of Muhammadans on the Council of the Dacca University is essential.

MOHAMED ALI.

Minute by Dr. Rash Behary Ghose.

The Teaching Staff.—The Indian Educational Service and the Provincial Educational Service.

THOUGH I am strongly in favour of the introduction of a large European element, I am bound to say that if the object of a residential University is to foster a corporate life and a feeling of comradeship, I doubt very much whether putting the European and the Indian professors into separate pens is the best way to attain it. As Sir Valentine Chirol points out, before Sir Charles Aitchison's Commission sat, "Indians and Europeans used to work side by side in the superior graded service of the department, and until quite recently they had drawn the same pay. The Commission abolished this equality and put the Europeans and the Indians into separate pens. The European pen was named Indian Educational Service. and the Native pen was named the Provincial Educational Service. Into the Provincial Service were put Indians holding lower posts than any held by Europeans and with no prospects of ever rising to the maximum salaries hitherto within their reach. To pretend that equality was maintained under the new scheme is idle, and the grievance thus created has caused a bitterness which is not allayed by the fact that the Commission created analogous grievances in other branches of the public service.—("*Indian Unrest*," pages 213-14.)

The Committee doubtless felt themselves bound to follow the existing system; but the scheme formulated by them should be liable to revision after the Islington Commission.

The Convocation.—Muhammadan Electorate.

2. The proposed separate electorate for Muhammadan graduates may, I fear, lead to a cleavage between them and the Hindu graduates with very undesirable results. I am, however, entirely in favour of reserving a certain number of memberships for Muhammadans to be elected by a mixed electorate.

Islamic Studies.

3. I fully sympathize with my Muhammadan fellow-countrymen in their desire to impart education in Islamic learning to their boys, and I hope that under the proposed scheme both good public servants and suitable recruits for the learned professions will be turned out by the Dacca University—men in no way inferior to their brother-graduates in general culture or in the intellectual equipment so essential to success either in the public service or in the learned professions under modern conditions.

The College for the Well-to-do Classes.

4. I am sorry I cannot bring myself to accept the recommendation of my colleagues upon this subject. In the first place, the expression "well-to-do classes" is extremely vague. In the next place, the comparative isolation of young men belonging to these classes would deprive them of half the benefits of a residential University. I am also strongly of opinion that if the wealthier classes want a separate college it is their duty to endow it themselves. And this reminds me that it has been suggested that the landlords' fees paid under the Bengal Tenancy Act should be diverted for the purpose of building the proposed college. Now it seems to me that this proposal is based upon the assumption that the whole of these moneys belong to big landlords. This assumption however is not, I venture to think, well-founded. My own impression is that the greater part of these fees is due to tenure-holders or to small land-owners. I should also point out that the law says that these fees *may be* and not *shall be* forfeited to the Government. It is therefore a mere privilege which, I take it, the Government would be slow to exercise not only in the interest of the landlord who may happen to be a person under disability or a *pardanashin* woman, but also in its own interest, as the three years must be calculated from the date of the service of the notice prescribed in section 12, section 13 or section 15, as the case may be, of the Bengal Tenancy Act, and we all know that such notices are not always duly served.

RASH BEHARY GHOSE.

APPENDICES.

APPENDIX I.

Courses of Study.

I. ENGLISH.

I. A. and I. Sc.

(*a*) Study of prescribed books, 2 of poetry and 2 of prose ... 2 papers.
(*b*) The Principles and Practice of Composition in English ... 2 „
(*c*) Conversation ... ... Oral test.

The set books should be selected from two lists—one of poetry and one of prose—approved by the Board of Studies for English as being suitable at this stage of the students' education (*see* specimen list appended). As the length of the books from among which selection is to be made varies very greatly, adherence to the number of books to be set, as here suggested, need not be rigid.

The examination at the end of the I. A. and I. Sc. courses will consist of four papers and an oral test :—

Paper I.—Set books—Poetry : three hours, 100 marks.
„ II.— „ Prose : three hours, 100 marks.
„ III.—Principles of composition, including abstracts and summaries : three hours, 100 marks.
„ IV.—Essay : two hours, 50 marks.

B.A. Pass.

(*a*) Study of prescribed books, 3 of poetry and 3 of prose ... 2 papers.
(*b*) Composition and the elements of criticism ... ... 2 „
(*c*) Conversation ... ... Oral test.

The set books to be selected from two lists—one of poetry and one of prose—approved by the Board of Studies for English as suitable for the Degree course (*see* specimen list appended).

The examination at the end of the B.A. Pass course should consist of four papers and an oral test :—

Paper I.—Set books—Poetry.
„ II.— „ Prose.
„ III.—Principles of composition and the elements of criticism.
„ IV.—Essay.

Papers I, II, III—of three hours each and of equal value.
Paper IV—of two hours and of half value.
Oral test—of not less than ten minutes and of half value.

B.A. Honours.

(*a*) Shakespeare or Milton—

Shakespeare.—Six plays, of which three only should be studied textually.

Milton.—Six books of Paradise Lost, *or* Paradise Regained and Samson Agonistes.

For these alternative authors there will be *two* papers—one on texts, one critical and general. A course of lectures on the principles of literary criticism should be provided.

(*b*) Poetry—

Not less than *six* set books—

Three from the period 1579—1798.
„ „ 1798—1900.

Two papers—one on the books of each period.

(*c*) Prose—

Not less than *six* set books :—

Three from the period, Dryden to the end of the eighteenth century.
„ the nineteenth century.

Two papers—one on the books of each period.

(*d*) Philology *or* the History of English Literature—*two* papers.

(*e*) An essay—*one* paper.

Thus, the examination will consist of nine papers, as indicated above, and an oral test.

The candidate will be expected to know something of the general history of the periods of literature he has been studying—at any rate in so far as it influenced the literature and thought of the day.

M.A.

The M.A. course should be highly specialized, the student being allowed the option of choosing from five or six, or even more, alternative courses.

The following courses may be found suitable :—

(*a*) Anglo-Saxon Language and Literature.
(*b*) Middle English Language and Literature.
(*c*) Fourteenth century Language and Literature.
(*d*) Elizabethan Literature.
(*e*) The English drama.
(*f*) The English novel.
(*g*) English prose from Dryden to the end of the nineteenth century.
(*h*) Modern English poetry (1798—1900).

It will not be necessary for the University to provide teaching for all these courses at one and the same time : according to the number of candidates, two or three of the eight suggested courses might be taught for definite periods of years.

An original thesis, or a piece of practical work approved by the Board of Studies for English, should form a part of each candidate's qualification for the degree, together with an examination consisting of six papers distributed between texts and criticism, according as best suits the several courses.

Candidates for the M.A. degree should be required to submit to the Board of Examiners a complete record of their work in the seminar. The examiners should examine each candidate orally both on his thesis (or practical work) and on the course of study which he has followed.

Specimen Lists of Poetry and Prose suitable for the Junior and B.A. Pass Courses.

LIST I.—JUNIOR COURSE.

Poetry—

(*a*) Matthew Arnold's "Sohrab and Rustum."
Macaulay's "Lays of Ancient Rome."
Coleridge's "Ancient Mariner."
Goldsmith's "Traveller" and "Deserted Village."
One of Scott's longer poems.

(*b*) Selections from—

Tennyson.	William Morris.	Cowper.
Kingsley.	Wordsworth.	Gray.

The set books for any one year should include—

(*a*) one or more single poems; and
(*b*) a volume of selections from a single poet.

Prose—

There is a peculiar difficulty in selecting suitable prose for this course. The books chosen should be interesting, suited to young Indian students and written in modern English. Selection should be made from two main classes of works—

A—Stories and adventures, including books of travel and exploration.
B—Lives of men of action, essays and collections of letters.

If two books are set, one might be taken from each class. The following are examples of suitable books:—

A—
- The Odyssey (Butcher and Lang's translations).
- The Iliad (Lang, Leaf and Myers).
- One of Scott's novels.
- Hereward the Wake.
- Lorna Dorne.
- Gulliver's Travels (a suitable edition).
- Also possibly from the Bible, the Book of Job or the Book of Ruth.

B— { Lives of Akbar, Asoka, King Alfred, Sir Phillip Sidney, Columbus, Captain Cook.
Gray's letters.
Cowper's letters (specially selected).
Kingsley's Roman and Teuton.
Wordsworth's Prefaces (when his poems are also set).

List II.—B.A. Pass.

Poetry—

Shakespeare	Two plays.
Milton	Minor poems. / Paradise, Lost two books.
Dryden	Annus Mirabilis. / Absalom and Achitophel, or as in Hales.
Gray	As in Hales.
Collins	
Johnson	
Goldsmith	
Thomson	Castle of Indolence.
Golden Treasury ...	Lyrics.
Wordsworth ...	Selections (Golden Treasury).
Keats	Selections.
Tennyson	Idylls, Princess.
M. Arnold	Selections (Golden Treasury).

Prose—

M. Arnold	Essays.
Leslie Stephen ...	Hours in a Library. / Studies of a Biographer.
George Eliot ...	Novels.
Jane Austen ...	
Landor	Conversations.
Shelley	Letters.
Lamb	Essays of Elia.
Mill	Autobiography.
Cowley	Essays.
Addison	
Steele	
Dryden	Prefaces.
Plutarch	Lives.

II. BENGALI.

I. A. and I. Sc.

The course for the junior stage should comprise not more than four current Bengali works to serve as models of style. Poetical selections need not be excluded.

One paper should be set carrying 100 marks, distributed as follows :—

(*a*) Translation from English to Bengali ... ... 40 marks.

The English passages selected must not be of a higher standard than that of books recommended for the Matriculation examination.

(*b*) Composition ... ... 20 marks.

Questions on composition should be so framed as to test the student's general knowledge of the structure and idiom of the Bengali language, and should not require him to reproduce rules of Bengali grammar.

(*c*) An essay ... ... 40 marks.

Four alternative subjects should be given for an essay, to be written in correct modern Bengali.

B.A. Pass.

(1) Compulsory subject: two advanced modern Bengali works, representing models of style.
(2) Optional subject: either a modern Bengali book of a descriptive, narrative, reflective or biographical character, or a selection from old classical Bengali books.

One paper should be set as follows :—

(*a*) Translation from English into Bengali.

The English passages selected for translation should be of a slightly higher standard than that of books recommended for the Matriculation examination.

(*b*) Composition.

Questions on composition are to test the students' general knowledge of the idiom of the Bengali language, with special reference to syntax, and must not necessitate a reproduction of the rules of Bengali grammar.

(*c*) An essay.

Four alternative subjects should be given for an essay to be written in correct and idiomatic modern Bengali.

(*d*) Critical questions on the subject-matter of either of the two books prescribed for the optional subject.

The majority of the Sub-Committee make the further recommendation that when a question bearing on mythology is set in the examination papers, there should be an alternative question of a general character. Rai Jatindra Nath Chaudhuri does not approve of this proposal.

III. SANSKRIT.

I. A.

1. Prescribed text to be confined to an easy Kavya, such as the Raghuvamsa ... ... 1 paper.
2. Grammar and composition. The text-book in grammar should be one on western lines, *e.g.*, Macdonell's Sanskrit Grammar. The text in composition should be confined to the construction of simple sentences in Sanskrit ... 1 „
3. Unseen Sanskrit passages to be translated into English with the help of a Sanskrit-English dictionary ... 1 „

Three papers in all, with the same maximum marks assigned to each. No alternative papers to be allowed.

B.A. Pass.

1. Prescribed texts to be confined to Kavya and Nataka ... 1 paper.

   And either—

   (*a*) a philosophical text, or
   (*b*) a selection from the sources of early Indian history, *e.g.*, prasastis and other epigraphic records ... } 1 „

2. Grammar and composition. Candidates should possess a fuller knowledge of grammar than at the junior stage, with special reference to syntax as treated in books like those of Whitney and Speijer. Composition should be confined to the translation of simple English narratives into Sanskrit ... ... 1 „
3. Unseen Sanskrit passages to be translated into English with the help of a Sanskrit-English dictionary ... 1 „

Four papers in all: the same value to be assigned to each.

B.A. Honours.

1. Texts, all compulsory, comprising—
   (*a*) Kavya ... ... 1 paper.
   (*b*) Nataka ... ... 1 „
   (*c*) Selections from the hymns of the Rig Veda and from the Brahmanas ... ... 1 „

2. Grammar. Questions to be set on Sanskrit grammar in general, and on the following portions of the Siddhanta Kaumudi, viz., Karaka, Samasa and Stritva ... ... 1 paper.
3. Composition to include translation of idiomatic English passages into Sanskrit ... ... 1 „
4. Unseen Sanskrit passages to be translated into English *without* the help of a dictionary ... ... 1 „
5. Two of the following texts to be chosen at the option of the candidate:— ... ... 2 papers.
   (*a*) Rhetoric, Alamkara Sastra.
   (*b*) A philosophical text.
   (*c*) Selections from the sources of early Indian history.
   (*d*) Selections from elementary Pali and Prakrit books.

Eight papers in all: the same value to be assigned to each.

M.A.

1. Selections from literature illustrative of Vedic and post-Vedic culture ... ... 2 papers.
2. Sanskrit grammar and philology ... ... 1 paper.
3. History of Sanskrit literature, and an English essay on a subject connected with Sanskrit studies ... ... 1 „
4. One optional subject. (The optional subjects might follow the lines laid down by the Calcutta University) ... 4 papers.

Eight papers in all: the same value to be assigned to each.

The Sub-Committee made the following special recommendations:—

(*a*) *Sanskrit Grammar.*—The study of grammar as a technical Sastra should be deferred to the B.A. Honours stage, when the scholar will be sufficiently advanced to utilize the materials to his hand in the system of Panini: but at the lower stages the subject should be learnt on western lines, and Indian students in the course of their reading should be encouraged to use a Sanskrit grammar, as they might use a dictionary or other book of reference.

(*b*) *Sanskrit Composition.*—To be confined to translation from English into Sanskrit, and to graduate in difficulty from the construction, at the junior stage, of easy Sanskrit sentences to a Sanskrit version, at the B.A. Honours examination, of a continuous passage in idiomatic English.

(*c*) *Translation of unseen Sanskrit passages into English.*—This important aid to the study of the literature should be specially encouraged: for which purpose a candidate at the Intermediate and B.A. Pass examinations should be allowed to use his Sanskrit-English dictionary during the examination.

IV. ARABIC.

I.A.

1. *Set books.*—Selections from—

(1) The Korán (easier passages),
(2) Munabbihát-i-Ibn-i-Hajar Asqaláni,

And two of the following:—

(1) Kalíla Wa Damna.
(2) Majáni al-Adab (Vols. II—IV).
(3) Al-Mutála'atul 'Arabyah (Cairo).
(4) Díwán 'Ali.

2. *Grammar (Sarf, Nahw) and Composition.*—Mabádi-ul-Arabia is recommended.

There should be two papers on the set books and one on Grammar and Composition. There should also be an oral test. The relative values of the papers should be in the following proportion:—

Set books	3
Grammar and Composition	2
Oral test	1

B.A. Pass.

1. *Set books*—

(1) Selections from the Korán and from the Munabbihát-i-Ibn-i-Hajar Asqaláni.
(2) Selections from one of the following:—
  (*a*) Maqámát Badí uz-Zamán Hamadáni.
  (*b*) Khutab un-Nabi was-Sahábáh from Al-Iqd ul farid.
  (*c*) Salásil ul-Qirá'áh (Parts V and VI) (Beyrout).
  (*d*) Futúh ul-Buldán and Sírat Ibn Hisham.
(3) Selections from two of the following:—
  (*a*) Qasídat ul-Burdah and Qasidat Farazdaq on Imám Zain ul-'Ábidín (the whole).
  (*b*) Díwán Hassán Ibn Thábit.
  (*c*) Díwán Abíl 'Atáhiyah.

2. *Grammar and Composition*—

The papers should be as follows:—

Prose	1 paper.
Poetry	1 „
Grammar and Composition	1 „

Questions on Grammar may also be set in the first two papers.

B.A. Honours.

A.—COMPULSORY—

1. *Set books*—

(*a*) Prose—

(1) Korán (ten books).
(2) Baizávi (Baqara).
(3) Shifá by Qázi Iyáz (biographical portions only).
(4) Maqámát ul-Harírí (first fifteen Maqamát).
(5) Murúj uz-zaheb, by Mas'údí.

(*b*) Poetry—

(1) Hamásah (Báb-ul-Hamásah).
(2) As-Sab'ul-Mu'allaqát (a portion only).
(3) Díwan ul-Mutanabbi (a portion only).

2. *Rhetoric and Prosody.*—'Ilm ul-Adab, Part I, Fí-l Inshá wal'Arúz and 'Arúz us-Sakkaki.

3. *History of Literature*—

(1) Nicholson's History of Arabic Literature.
(2) Tarikh Ádáb il-Lughat il-'Arabiah (Cairo).

4. *Composition and Translation.*

B.—ONE OF THE FOLLOWING :—

(1) A special period of Arabic Literature, studied in connection with two or three selected books.
(2) Outlines of Islamic History, down to the end of the Abbaside Caliphate.

The papers should be as follows:—

Prose	...	...	...	2 papers.
Poetry	...	...	...	2 „
Rhetoric and Prosody	...	...	...	1 paper.
History of Literature	...	...	...	1 „
Composition and Translation		...	...	2 papers.
Special period of Literature or Islamic History		...	...	1 paper.

There should also be an oral test, to be equal in value to 1 paper.

M.A.

1. Arabic language, including higher Grammar, Rhetoric, Prosody, Composition and Translation.
2. An essay in Arabic.
3. An oral test.
4. Arabic literature—

(*a*) Prose—

(1) Korán (the whole).
(2) Khutab ul'Arab from Al Iqd ul-farid.
(3) Maqámát ul-Harírí.
(4) Kitábul Aghání [Rannátul Masálís Wal-Masání, Vol. I (Beyrout)].

(*b*) Poetry—

(1) As-Sab 'ul-Mu'allaqat.
(2) Hamásah.
(3) Díwán an-Nábighah.
(4) Qasídat Bánat Su'ád.

5. Every candidate must also take one of the following:—

(*a*) *Additional Arabic.*—A special subject or period of Arabic Literature, studied in connection with the works of a number of selected authors.

(*b*) *Philology*, including a knowledge of a cognate language.

(*c*) *Islamic History.*—A special subject or period of Islamic History, studied from original printed authorities (as in the case of the History course).

(*d*) *Hadis and Fiqh*, studied in such books as—

Tirmizi. | Kanzud Daqáiq. | Khulásat-ul-Usul.

(*e*) *Kalám and Tafsir*, studied in such books as—

Hujjatullah-ul-Bálighah (Vol. I). | Ma'álimuddin. | Ma'álim-ul Tanzil.

Wherever the Korán is studied, it must be used with suitable additions conformable to Muhammadan usage.

NOTE.—At a conference held in November, philology was transferred from the obligatory to the alternative subjects, and its scope was widened to include an elementary knowledge of a cognate Semitic language.

V. PERSIAN.

I.A.

1. *Set books.*—A suitable selection from the two groups which follow:—

Prose—	Poetry—
(1) Nigár-i-Dánesh.	(1) Díwán-i-Khosro.
(2) Akhláq-i-Mohsini.	(2) Mantiq-ut-Tair.
(3) Tuzak-i-Jahángiri.	(3) Works of Jámi.
(4) Kimiyá-i-Sá'ádat.	(4) Bostán.
(5) Safar-Náma of the Shah of Iran.	

2. *Grammar.*—'Ahsan-ul-Qawá'id' or 'Qawá'id-i-Rawshan Ali' or a suitable Anglo-Persian grammar may be used.

3. *Oral test*—

The papers will be—

Poetry	1 paper.
Prose	1 „
Grammar, composition and translation ...	1 „

The relative value of the subjects to be—

Set books	3
Grammar and Composition	2
Oral test	1

B.A. Pass.

1. *Set books.*—A suitable selection from each of the following groups:—

Prose—	Poetry—
(1) Akbar Náma.	(1) Sháh Námā.
(2) Siásat Náma-i-Nizámul Mulk.	(2) Works of Zahir Faryábi.
(3) Shabnam-i-Shádáb.	(3) Díwáni Hakim Nasir Khosro.
(4) Persian Plays (edited by Rogers).	(4) Kulliyát-i-Qá'áni.
(5) Rawzatul Ahbáb, by Jámi.	(5) Aqá'íd-i-Jámi
	(6) Easy selections from the Díwan-i-Hafiz.

2. *Grammar and Composition.*

3. *Oral test.*

Papers to be—

Prose	... 1 paper.
Poetry	... 1 „
Grammar, composition and translation	... 1 „

Oral test equal to one paper.

Questions on Grammar may be set in the papers on Prose and Poetry.

B.A. Honours.

1. *Set books*—

Prose—	Poetry—
(1) Akhláq-i-Jaláli.	(1) Qasá'id-i-Anwari
(2) Safar-Náma-i-Sháh Násiruddin Qáchár.	(2) Masnavi-i-Maulána Rum (first Daftar).
(3) Zafar Náma-i-Ali Yazdi.	(3) Díwán-i-Hafiz.
(4) Mukátabát-i-'Allámi.	(4) Tazkira-i-Daulat Sháhi.
	(5) Omar Khayyam (Rubáiyát).

2. *Grammar.*—Platt and Ranking's Persian Grammar may be used.

3. A general outline of the History of Persian Literature—Browne's Literary History of Persia.

4. Persian translation and composition.

5. A selected period of Persian Literature, with special reference to two or three selected works.

6. Outlines of Persian History, from the conquest by Chengiz Khan to the close of the Safavi Dynasty.

The papers will be as follow:—

Prose	... 2 papers.
Poetry	... 2 „
Grammar	... 1 paper.
History of Literature	... 1 „
Translation and Composition ...	... 2 papers.
Selected period of Persian Literature	... 1 paper.
Persian History	... 1 „

The oral test to be equal to one paper.

M.A.

1 Persian language, including Grammar, Prosody, Rhetoric, Composition and Translation.

2. Persian Literature—

(*a*) Prose—	(*b*) Poetry—
(1) Se-Nasr-i-Zahuri.	(1) Hadiqa-i-Hakim Sanáyi.
(2) Tarikh-i-Wassáf.	(2) Qasá'id-i-Kháqáni.
(3) Akhlaq-i-Násiri.	(3) Sáqinama-i-Zahuri.
(4) Tazkira-i-Lutf-Ali-Khan.	(4) Díwán-i-Unsuri.
(5) A portion of Akbarnama.	(5) Kulliát-i-Sáib.

3. An essay in Persian.
4. An oral test.
5. One of the following:—
   (1) A special period or subject of Persian Literature, studied with reference to the works of selected authors.
   (2) A special period or subject of Persian History, studied with reference to printed original authorities (as in the general History course).
   (3) The ancient literature and language of Persia (Pehlevi) studied in such books as Dinkard, Bundahish, Arda Viraf (ed. Hoshang and Hang) and Mainyo i Khard (ed. West).

NOTE.—At a conference held in November, some alterations were made on consideration of a note prepared by Captain Peart, Secretary to the Board of Examiners.

VI. HISTORY.

I.A.

(*a*) General History of India under British Rule	...	1 paper.
(*b*) Outlines of English History	...	1 „
(*c*) Outlines of Roman History to A.D. 476	...	1 „

B.A. Pass.

(*a*) History of India, Hindu Period	...	1 paper.
(*b*) History of India, Muhammadan Period	...	1 „
(*c*) History of Europe during the nineteenth century		1 „

B.A. Honours.

Every student should take—

(*a*) Indian History	2 papers.
(*b*) The Constitutional History of England from A.D. 1485 to the present day	1 paper.
(*c*) European History—	
Classical	1 „
Medieval	1 „
Modern	1 „
(*d*) Essay	1 „

He should also take one of the following:—

(*e*) A special subject or period of History	2 papers.
(*f*) General Islamic History	2 „

M.A.

Compulsory subjects:—

(*a*) A special period of history studied in connection with original printed authorities	2 papers.
(*b*) International Law (about the standard of Hall's International Law)	1 paper.
A selected subject from the history of International relations, *e.g.*, the relations between Russia and Turkey in the eighteenth century	1 „
(*c*) Study of some eminent statesmen, *e.g.*, Cavour, Akbar, Gladstone	1 „
(*d*) Political science studied in such books as Sidgwick's Science of Politics, Bryce's American Commonwealth, Lowell's Parties in France, and Greenidge's Roman Public Life	2 papers.
(*e*) English Constitutional History up to 1485 ...	1 paper.
(*f*) An essay	1 „

Candidates should also be permitted to take one of the following subjects, and they should receive additional credit for so doing:—

(*g*) A special subject in the history of thought, literature or art	2 papers.
(*h*) Political Economy and the Economic History of England and India	2 „
(*i*) The history of some leading political principle or idea, such as Federalism, Toleration, Liberalism or the like	1 paper.
The religious history of India	1 „
(*j*) General history and civilization of the ancient East, *i.e.*, Pre-Macedonian Egypt and Western Asia	2 papers.

The original authorities named in subject (*a*) should be in the languages in which they were written.

The subjects in all the examinations should be so defined and described that it may be possible to allow to each paper the same value.

A knowledge of geography and the ability to draw maps should be required of students of history at every stage of their career.

VII. ECONOMICS.

B.A. Pass.

(*a*)	General Economics	2 papers.
(*b*)	Descriptive Economics: special attention should be paid under this head to the study of Indian conditions and problems	1 paper.

At this stage the syllabus should not include any part of the science of Politics. No alternative subjects or papers should be allowed.

B.A. Honours.

(*a*)	Principles of Economics	2 papers.
(*b*)	Descriptive Economics, with special reference to Indian conditions and problems	1 paper.
(*c*)	Economic History since 1760, particularly of England and India	1 „
(*d*)	History of the Science of Political Economy ...	1 „
(*e*)	Political Science, together with the study of the existing British constitution and the administration of India	2 papers.
(*f*)	An essay	1 paper.

M.A.

(*a*)	Principles of Economics, including the History of Economic Theory, problems of International Trade, Currency, Banking, Finance, Market Organization, the Economic Structure of Society, simple Statistical methods	3 papers.
(*b*)	Principles of Political Science, and the History of the Political Theories of a selected period, studied with reference to original authorities ...	2 „

(*c*) Indian Economic conditions and problems ... 1 paper.
(*d*) A special subject or a special critical study of the work of a great Economist ... ... 2 papers.
(*e*) An essay ... ... 1 paper.

The papers in each examination should be of equal value.

N.B.—We have slightly varied the course proposed by the Sub-Committee, mainly by extending the B.A. Honours course.
Mr. T. T. Williams and Mr. C. Russel differed on some points from the views of the majority of the Sub-Committee.

VIII. PHILOSOPHY.

I.A.

The elements of Logic, Deductive and Inductive, defined by syllabus.
Two papers, each of three hours and 100 marks.

B.A. Pass.

(1) The critical study of one or more philosophical classics, such as Descartes on Method and Berkeley's Dialogues (Hylas and Philonous) ... 1 paper.
(2) The Elements of Psychology, defined by syllabus ... 1 „
(3) The Elements of Ethics, defined by syllabus ... 1 „

Three papers, each of three hours and of equal value.

The special aim of the first part of this course should be to induce students to make a first-hand acquaintance with some original work or works in Philosophy.
Candidates who have not taken Logic as part of the I.A. course should be required to take that course in addition to the above, for the B.A. Pass.

B.A. Honours.

The object of this course should be to lay, in the mind of the student, the foundations of deep study.

The course should be—

(1) Logic: a more advanced course than that for the I.A., defined by syllabus ... ... 1 paper.
(2) Psychology: a deeper and wider course than the Pass course, defined by syllabus ... ... 1 „

(3) Ethics and Social Philosophy, defined by syllabus 1 paper.
(4) Natural Theology, defined by syllabus ... ... 1 „
(5) History of Greek Philosophy, *or* The Outlines of Indian Philosophy (the Nyaya, Sankhya and Vedanta systems) ... ... 1 „
(6) The Theory of Knowledge: special attention being given to the writings of the leading philosophers, from Descartes to Kant ... ... 3 papers.

The following books indicate the content of this subject:—

Descartes	...	On Method. Principles.
Locke	...	Essay (with omissions).
Berkeley	...	Theory of Vision: Dialogues: Principles.
Hume	...	Two "Enquiries;" and
A very careful study of the system of Kant.		

In all eight papers of equal value.

Under (5), "The Outlines of Indian Philosophy," two members of the Sub-Committee considered that certain texts, such as Tarka Sangraha, Vedanta Sara and Sankhya Karika, should be prescribed to be studied in the original Sanskrit. In view of the recommendation of the Sanskrit Sub-Committee that, as far as possible, Sanskrit studies should be made to correlate with other courses—a recommendation which we approve—this suggestion should be kept in mind by the Board of Philosophical Studies.

M.A.

Three advanced courses of study, namely—

(1) History of Philosophy ... ... 2 papers.
(2) Metaphysics and Logic, with special attention to Sansmodern problems of thought ... ... 2 „
(3) *One* of the following:—

(*a*) Indian Philosophy with a study of original krit texts ... ...
(*b*) Greek Philosophy, founded on the works of Plato and Aristotle, studied in translations ...
(*c*) Psychology, including Experimental Psychology
(*d*) Ethics and Social Philosophy ... ...
(*e*) The Philosophy of Religion ... ... } 2 „

IX. MATHEMATICS.

I.A. and I.Sc.

COMPULSORY—

1. *Algebra.*—The more elementary portions, and also the solution of a quadratic equation; solutions of simultaneous equations when not more than one is a quadratic. Permutations and Combinations. Arithmetic and geometric progressions. Theory of indices; surds; imaginary quantities. Logarithms. The binomial, logarithmic and exponential series. Graphs of rational integral expressions and of x^n, log x, e^x.

2. *Trigonometry*—

Measurement of angles.

The trigonometrical ratios; their values in simple cases; graphs of the trigonometrical ratios.

Trigonometrical formulæ involving one or two angles.

Relations between the sides and angles of a triangle.

Solution of triangles; simple problems on the determination of heights and distances.

3. (*a*) Practical arithmetic and the mensuration of areas and solids.

(*b*) Solid geometry—

The substance of Euclid, Book XI, viz., the properties of straight lines and planes, particularly the properties of intersection, parallelism and perpendicularity; dihedral, trihedral and polyhedral angles.

4. *Statics and Dynamics*—

(*a*) Uniform and uniformly accelerated motion; composition of velocities and accelerations; relative velocities and accelerations.

Projectiles.

The laws of motion. Resultant of co-planar forces acting on a particle. Properties of the resultant. Simple illustrations of the laws of motion such as the motion of a particle on an inclined plane, the motion of two particles connected by a string, the uniform circular motion of a particle.

(*b*) Resultant of concurrent and parallel forces acting on a rigid body. Properties of the resultant. Centre of parallel forces; centre of mass; centre of gravity. Composition of co-planar couples. Reduction of any system of forces acting on a rigid body to a single force and a single couple and to a single resultant force or couple.

Conditions of equilibrium for a rigid body acted on by co-planar forces.

Problems on equilibrium.

Friction.

Simple machines.

(*c*) Impulse of a uniform force acting on a particle; principle of momentum in such a case; conservation of the momentum of a system of particles. Simple cases of impact, including the impact of two spheres whose centres move in the same plane.

Work of a uniform force acting on a particle; principle of energy; application of the principle to the solution of problems.

OPTIONAL—

More difficult questions on the subjects of the compulsory course.

Two papers should be set on the compulsory course, the first being allotted to algebra, plane trigonometry, practical arithmetic, mensuration and solid geometry, and the second to elementary statics and dynamics.

One paper should be set for the optional part of the examination, the main object of which is to single out students who are capable of taking advanced courses in mathematics.

B.A. and B.Sc. Pass, Subsidiary and Principal Courses.

Students reading Mathematics for the B.A. or as a subsidiary course for the B.Sc. will take groups I and either II or IV, while those reading this subject as a principal course for the B.Sc. will take groups I, II, III and IV. There should be two papers for students taking the subsidiary course, and four papers for students taking mathematics as a principal subject.

Group I.—Algebra, Trigonometry and Analytical Geometry.

(*a*) *Algebra*—

The more elementary portions.

The binomial, exponential and logarithmic series.

Partial fractions.

Summation of simple series.

The simpler tests for convergence.

(*b*) *Trigonometry*—

The more elementary portions.

The solution of trigonometrical equations.

Summation of trigonometrical series.

De Moivre's theorem.

Exponential values of $\sin\theta$ and $\cos\theta$; hyperbolic functions. Expansions for $\cos n\theta$, $\sin n\theta$, $\cos^n\theta$, $\sin^n\theta$. Graphical solutions of equations.

(*c*) *Analytical Geometry*—

Cartesian and polar co-ordinates; areas of triangles and polygons.

Changes of axes.

The straight line; equations representing two straight lines.

The circle.

The ellipse, parabola and hyperbola referred to their principal axes or axes parallel to principal axes.

(*d*) *Conic Sections*—*

General properties of the curves deduced from the focus-directrix definition. The simpler special properties of the parabola, ellipse and hyperbola. The curves shown to be plane sections of a right circular cone.

Group II.—Differential and Integral Calculus.

(*a*) *Differential Calculus*—

Differentiation in general, including Leibnitz's Theorem, partial differentiation, and differentiation of implicit functions.

Orders of smallness; infinitesimals and differentials.

Elementary proofs of Taylor's and Maclaurin's Expansions.

Expansions of functions of a single variable.

Evaluation of undetermined forms.

Tangents and normals to curves.

Maximum and minimum values of a function of one independent variable.

Tracing of simple curves whose equations are given in polar or cartesian co-ordinates.

(*b*) *Integral Calculus*—

Integration regarded as a process of summation and as the inverse of differentiation.

The standard integrals.

Integration by substitution and by parts.

Integration of rational functions.

Simple integrals involving trigonometrical functions or the square root of a quadratic expression.

Application to the determination of lengths of curves, areas, volumes, centres of mass and moments of inertia.

Mensuration of pyramids, prisms, cones, cylinders, spheres, tehahedra and the regular solids.

Group III.—Pure Mathematics.

(*a*) *Differential and Integral Calculus*—

Expansion of a function of several independent variables. Multiple points, asymptotes and curvature of plane curves.

Tracing of plane curves.

Evaluation of easy, double and multiple integrals.

Applications to the determination of volumes, centres of mass and moments of inertia.

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* The Sub-Committee proposed to make Conic Sections an optional subject in the junior course: we have preferred to include it in the senior course.

(*b*) *Differential Equations*—

Ordinary differential equations of the first and second orders.

Linear differential equations with constant co-efficients.

Applications.

Motion of a particle having one degree of freedom: rectilinear motion under any forces; motion on a smooth curve.

Motion of a rigid body about a fixed smooth axis.

Simple harmonic motion: oscillations about a position of equilibrium; stability of equilibrium.

(*c*) *Analytical Solid Geometry*—

Cartesian and polar co-ordinates.

Straight lines and planes in rectangular co-ordinates.

Spheres, ellipsoids, hyperboloids and paraboloids referred to principal axes or axes parallel to principal axes.

Group IV.—Mixed Mathematics.

(*a*) *Hydrostatics* (without the use of the Calculus)—

Nature and general properties of fluid pressure.

Density and specific gravity of a homogeneous mixture.

Relations between pressure, density and force.

Thrust on a plane area; centre of pressure.

Resultant pressure on an immersed solid and on any immersed surface, particularly in the case of a homogeneous liquid under gravity.

Conditions for the equilibrium of a floating body.

Hydrostatic instruments.

Determination of specific gravity.

Properties of gases.

(*b*) *Astronomy* (without the use of Spherical Trigonometry)—

Co-ordinates defining the position of a point on the earth's surface or on the celestial sphere.

Phenomena due to the earth's diurnal rotation about its axis and to its annual motion round the sun.

Measurement of time.

Determination of the right ascension and declination of a star.

Refraction and parallax.

Form and dimensions of the earth's orbit.

Determination of the first point of Aries and of the obliquity of the ecliptic.

Precession, nutation and aberration.

Motion of the moon and planets.

Eclipses.

Determination of terrestrial latitude and longitude.

Shape and size of the earth.

B.A. and B.Sc. Honours.

I.—Algebra, Trigonometry and Theory of Equations.

(*a*) *Algebra*—

The more elementary portions; and also the binomial, exponential and logarithmic series.

Partial fractions; continued fractions; inequalities.

Convergence and divergence of series; summation of series.

Determinants.

(*b*) *Trigonometry*—

The more elementary portions; and also the solution of triangles; properties of triangles; determination of heights and distances.

De Moivre's theorem: expansions for $\cos n\theta$, $\sin n\theta$, $\cos^n\theta$, $\sin^n\theta$; expansions of $\cos\theta$ and $\sin\theta$; factorisation of $\cos\theta$ and $\sin\theta$; hyperbolic functions.

Elementary Spherical Trigonometry.

(*c*) *Theory of Equations*—

Existence of roots; relations between roots and co-efficients.

Determination of the number of real roots; separation of the real roots.

Discrimination of the nature of the roots of the cubic and quartic; algebraic solutions of the cubic and quartic.

Approximations to the real roots of numerical equations.

II.—Analytical Geometry.

(*a*) *Plane Geometry*—

Cartesian and polar co-ordinates; transformation of cartesian co-ordinates.

Equations representing straight lines.

The special forms of the equations of circles, parabolas, ellipses and hyperbolas in cartesian and polar co-ordinates.

The general equation of the second degree in cartesian co-ordinates.

(*b*) *Solid Geometry*—

Cartesian and polar co-ordinates; transformations of cartesian co-ordinates.

Equations representing straight lines and planes.

Surfaces represented by the general equation of the second degree in cartesian co-ordinates.

Standard equations of ellipsoids, hyperboloids, paraboloids, cones and cylinders.

Plane sections of a quadric surface; generating lines.

Curves in general.

Tangent, principal normal, binormal, osculating plane, curvature and torsion.

Surfaces in general: Curvature, lines of curvature, geodesic lines.

III.—Differential and Integral Calculus and Differential Equations.

(*a*) *Differential Calculus—*

The more elementary portions; and also—

Expansions of functions of several variables; maximum and minimum values of such functions.

Asymptotes and multiple points of plane curves.

Tracing of plane curves.

Envelopes; curvature.

(*b*) *Integral Calculus—*

The more elementary portions; and also—

Formulæ of reduction; definite integrals.

Double and multiple integrals; Dirichlet's theorem.

Applications to the determination of volumes, centres of mass and moments of inertia.

(*c*) *Differential equations—*

Ordinary differential equations of the first and second orders.

Linear differential equations with constant co-efficients.

IV.—Uniplanar Statics (treated analytically).

Addition and subtraction of vectors; sealar and vector products of two vectors.

Resultant of forces acting on a particle; resultant of concurrent and parallel forces acting on a rigid body; properties of the resultant.

Composition of co-planar couples.

Reduction of any system of co-planar forces acting on a rigid body to a single force and a single couple; reduction to a single resultant force or couple.

Conditions for the equilibrium of a particle or rigid body acted on by co-planar forces; problems on equilibrium.

Centres of mass and centres of gravity.

Laws of friction; problems involving friction.

Principle of virtual work; simple machines.

V.—Uniplanar Dynamics of Particles and Rigid Bodies.

(*a*) *Dynamics of a particle—*

Composition of the velocities and accelerations of a point; relative velocities and accelerations.

Expressions for the component velocities and accelerations in cartesian, polar and intrinsic co-ordinates.

Laws of motion. Equations of motion. Motion of the centre of mass of a system of particles. Principles of energy and of linear and angular momentum for a particle or any system of particles.

Rectilinear motion of a particle under given forces; parabolic motion under gravity.

Central orbits.

Motion of a particle constrained to lie on a plane curve; the simple pendulum.

Impact of smooth spheres.

(*b*) *Rigid Dynamics*—

D'Alembert's Principle. Reduction of the effective forces of a rigid body to a single effective force and a single effective couple at a fixed point or at the centre of mass.

Equations of motion of a rigid body moving parallel to a fixed plane.

Motion of the centre of mass. Principles of energy and of linear and angular momentum.

Motion of a rigid body about a fixed axis; the compound pendulum.

Free motion of a rigid body parallel to a fixed plane under given forces.

VI (A).—Hydrostatics and Astronomy.

(*a*) *Hydrostatics*—

Nature and general properties of fluid pressure.

Density and specific gravity of a homogeneous mixture.

Relations between pressure, density and force.

Thrust on a plane area; centre of pressure.

Resultant pressure on an immersed solid and on any immersed surface, particularly in the case of a homogeneous liquid under gravity.

Conditions for the equilibrium and the stability of the equilibrium of a floating body.

Hydrostatic instruments; determination of specific gravity.

Properties of gases.

(*b*) *Astronomy*—

Co-ordinates defining the position of a point on the earth's surface, or on the celestial sphere.

Phenomena due to the earth's diurnal rotation about its axis, and to its annual motion round the sun.

Description and use of astronomical instruments. Measurement of time.

Determination of the right ascension and declination of a star.

Refraction and parallax.

Form and dimensions of the earth's orbit.

Determination of the first point of Aries and of the obliquity of the ecliptic.

Precession, nutation and aberration.

Motion of the moon and planets; eclipses.

Determination of terrestrial latitude and longitude.

Shape and size of the earth.

VI (B).—Pure Geometry.

Harmonic ranges and pencils. Anharmonic ratios.

Properties of triangles and quadrilaterals.

Properties of circles; co-axal circles; orthogonal circles; centres of similitude.

Inversion.

Central, parallel and orthogonal projection.
Properties of Conic sections.
Reciprocation.
Homography and involution.

Students will take either VIA or VIB, but not both these courses.

There will be six papers of three hours each. A seventh paper will be set containing problems of considerable difficulty: it will merely serve to assist in the determination of the classes and of the relative places of students.

M.A. and M.Sc.

Mixed Mathematics.

Ordinary Subjects—

Analytical Statics, including theory of Attractions and Potential.
Dynamics of a particle.
Rigid dynamics.
Hydrostatics.
Hydrodynamics.
Spherical astronomy.

Special Subjects—

Elasticity.
Advanced dynamics.
Advanced astronomy.
Heat.
Light.
Sound.
Electricity and magnetism.
Advanced hydrodynamics.

Pure Mathematics.

Ordinary Subjects—

Higher algebra; plane and spherical trigonometry.
Theory of equations and algebra of quantics.
Plane analytical geometry.
Analytical geometry of surfaces and curves.
Differential calculus; integral calculus; calculus of variations.
Differential equations.

Special Subjects—

Theory of functions (of real variables; of a complex variable).
Theory of groups (of finite order; continuous).
Theory of numbers.
Projective geometry.
Theory of invariants.
Vector analysis and quaternions.
Spherical harmonics and harmonic analysis.
Differential geometry.

Candidates should take all the ordinary subjects and *one* special subject. There may be six papers in the ordinary subjects and two in the special subject chosen, each of the eight papers having the same value.

An extra paper should be set containing problems of an advanced character: it will merely serve to assist in the determination of the classes and relative places of the students.

X. CHEMISTRY.

I.A. and I.Sc.

A course similar to that prescribed by the University of Calcutta.

B.A. and B.Sc. Subsidiary.

Theoretical.—Chemistry of the more important elements and their most familiar compounds, and the elements of physical chemistry.

Practical.—Qualitative and simple quantitative analysis and preparations (confined to inorganic chemistry).

B.Sc. Principal.

Theoretical.—A general knowledge of organic chemistry.

Practical.—The detection of simple organic compounds, and easy organic preparations; also

(for non-medical students) quantitative analysis to a somewhat higher stage than for the subsidiary course;

(for medical students) the detection of substances of importance in medicine, preceded by such a course of qualitative inorganic analysis as to fit them for this.

B.Sc. Honours.

Theoretical.—Candidates will be required to show a general acquaintance with the three main divisions of the subject, viz.—

Inorganic chemistry. | Organic chemistry. | Physical chemistry.

and also to have some knowledge of the history of chemistry.

Practical.—The subjects specified for the subsidiary and principal Pass courses treated more fully, and the qualitative analysis of simple organic mixtures and the quantitative analysis of inorganic mixtures.

M.Sc.

The subjects of examination will be—

1. Inorganic chemistry. | 2. Organic chemistry. | 3. Physical chemistry.

The student will undergo an advanced course of instruction in each branch, but should specialize in one of them. The examination should consist of six theoretical papers and six periods of practical work. There will be one general paper and one special paper in each subject, and a student will be required to take the three general papers and one special paper.

Research.—Students should be allowed to offer, with the consent of their professor, a piece of research, the nature of which must be indicated and approved at the commencement of the course. The research must be carried on in the University Laboratory under the control of the professors.

Students offering a piece of research may be excused the special paper and one of the general papers.

XI. PHYSICS.

I.A. and I.Sc.

1. *General properties of matter—*

Units and dimensions.
Elementary ideas of kinematics, dynamics and statics.
Elementary hydrostatics.
General properties of matter.

2. *Heat—*

The two ideas, heat and temperature.
Effects produced by heat.
Calorimetry.
Conduction, radiation, convection.

3. *Sound—*

Nature, production and propagation of sound.
Reflection, refraction.
Vibrations of strings and air columns.

4. *Light—*

Propagation of light.
Reflection, refraction at plane and spherical surfaces
Photometry.
Dispersion.
Simple optical instruments.

5. *Electricity and Magnetism—*

Lines of force between electric charges. Induction. Potentials. Electric machines.

Production of current. Primary cells. Effects of currents.

Elementary quantitative applications of Ohm's Law.

Properties of magnets. Magnetic induction. Terrestrial magnetism.

Phenomena of electro-magnetism and electro-dynamics.

Practical—Illustrations of the theoretical syllabus.

B.A. and B.Sc. Subsidiary.

The subjects of the Intermediate treated in greater detail, with the addition of—

1. *General Physics—*

Simple Harmonic motion.

Rotation of a rigid body about an axis.

Potential.

Gravitation.

Elasticity.

Surface tension.

Viscosity.

2. *Heat—*

Simple applications to Meteorology, especially in relation to Indian Meteorology.

3. *Light—*

Elementary Physical Optics.

4. *Sound—*

Musical scales.

5. *Electricity and Magnetism—*

Thermo-electricity.

Conduction of electricity through liquids and gases.

Practical Course.

Fundamental processes involved in physical measurements.

Experiments illustrative of kinematical and dynamical principles.

Measurement of Young's modulus and simple rigidity.

Measurement of surface tension.

Heat—

Thermometry, including the air thermometer.
Expansions of solids and liquids.
Calorimetry.
Latent heat of ice and total heat of steam.
Vapour.
Density.
Hygrometry.

Light—

Measurements connected with mirrors, prisms, lenses and simple lens systems.
Photometry.
Adjustment and use of the spectrometer.

Sound—

Measurements of the velocity of sound.
Measurement of frequency and wave-length in strings and air columns.

Electricity and Magnetism—

Measurement of the magnetic elements by simple instrumental methods.
Measurement of resistance, electromotive force and current.

B.Sc. Principal.

The B.Sc. Subsidiary, with the addition of—

1. *General Physics—*

   The resolution of complex wave-motions into S.H.M.
   Elements of Rigid Dynamics with special reference to Physics.

2. *Heat—*

   Elementary Thermodynamics.

3. *Light—*

   Thick lenses. Aberration.
   Spectroscopy.

4. *Electricity and Magnetism—*

   Elementary treatment of modern electrical theory.
   Magnetic potential. Hysteresis.

Practical Course.

The B.Sc. Subsidiary, with the addition of—

General Physics—

Variation in surface tension with temperature.
Viscosity of liquids.

Heat—

Conductivity.
Determination of the mechanical equivalent of heat.
Absolute expansion of a liquid.
Expansion of solids, liquids and gases more accurately determined.
Experiments on radiation.

Light—

More accurate determination of refractive index and of wave-length.
Examination of the properties of plane and circularly polarised light.

Sound—

The Subsidiary course treated more accurately or by other methods.

Electricity and Magnetism—

Measurement of magnetic induction by different methods.
Construction and adjustment of a resistance coil.
Temperature, variation of resistance.
Measurement of the electromotive force of thermo-electric couples.
Measurement of the mechanical equivalent of heat by the electrical method.
Simple tests on the efficiency of a motor.

B.Sc. Honours.

The subjects of the Pass course treated more fully and in greater detail. In this course a greater demand will be made upon the mathematical knowledge of the student.

Practical Course.

Glass-blowing and the general processes of the physical laboratory, including a short course of workshop practice in the making of simple physical instruments.
The practical course for the principal B.Sc., with the addition of—

General Physics.—The accurate determination of "g." Temperature variation of viscosity ; calibration of tubes.

Heat.—Nil.

Light.—More advanced interference measurements.

Experiments on thick lens systems.

More advanced spectroscopy.

Sound.—Quantitative measurements on sounds involving notes of high frequency.

Magnetism and Electricity.—Comparison of self and mutual inductance.

Measurement of field strength.

Elementary experiments on the ionization of liquids and gases.

Construction of a Clarke cell.

Exercises in the practice of photography.

M.Sc.

Students should be required to specialize in two of the undermentioned subjects:—

1. General physics and sound.
2. Light.
3. Heat.
4. Electricity and Magnetism.

There should be four theoretical papers—two in each of the special subjects offered.

The practical examination should consist of six periods of six hours or more. In the first four days there will be a practical examination in the special subjects, while in the last two days a piece of work will be set in some branch of physics as a test of the student's powers of physical manipulation.

Research.—Students should be allowed, with the consent of the senior professors, to offer a piece of research in some branch of physics in lieu of one of the special subjects. They must announce their intention to do this and the subject of their research at the commencement of the course.

XII. ZOOLOGY.

I.Sc. (Medical Students).

Zoology and its relation to medicine.

The nature of living matter. Animal and plant contrasted. The cell, its structure and function. Cell division.

An elementary knowledge of Protozoa, Cœlenterata, Annelida, Arthropoda, Mollusca, Batrachia and Mammalia.

An elementary knowledge of the following:—

(1) Protozoa associated with disease in man, with special reference to entamœba, trypanosomes and malarial parasites.

(2) Flat worms and round worms parasitic in man.

(3) Blood-sucking Arthropoda: the structure of the mouth-parts and probable mode of transference of parasites in the flea, the bed bug, the mosquito and the tick.

The elementary embryology of the chick and of a mammal.
A brief outline of modern theories of evolution.

[Types to be studied in detail: amœba, monocystis, hydra, earthworm, palæmon, unio, achatina, bufo, guinea-pig.]

The use of the microscope.

B.A. and Subsidiary B.Sc.

The Calcutta University Preliminary M.B. revised syllabus, somewhat amplified.

Principal B.Sc.

The previous course, further amplified.
A clear knowledge of the phyla of the animal kingdom, their morphology, comparative anatomy and development.
The geographical distribution of animals with special reference to vertebrates.

[Types in addition to those in the previous course: spongilla, asteroid, trematode, leech, mosquito, tunicate, amphioxus and pigeon.]

Honours B.Sc.

The systematic zoology, morphology, comparative anatomy and development of the invertebrate and vertebrate groups.
A knowledge of the general principles of embryology.
The geographical, bathymetrical and geological distribution of animals.
The principles of the theory of evolution.

[The following types in addition to those in the Calcutta Preliminary M.B. Syllabus :—spongilla, a compound hydroid, an asteroid, an echinoid, a trematode, a nematode, a cestode, a leech, a scorpion, a mosquito, ampullaria, a cephalopod, a tunicate, amphioxus, both bony and cartilaginous fish, a pigeon.]

A thorough knowledge of microscopic technique.

M.Sc.

Students should devote most of their time to practical work in the laboratory and in the field under the supervision of the professor. They should be allowed to spend a portion of the time, say three months, in study at some recognized institution, such as the Indian Museum or the Research Institute at Pusa. Specialization along particular lines should be encouraged. Short courses of advanced lectures may be given on (1) subjects of general biological interest: variation, heredity and evolution, cytology,* adaptation, colour and mimicry, or other subjects at the discretion of the professor, and (2) particular groups of animals.

During the last year the professor should require students to carry out special pieces of advanced practical work, the results of which may count towards the M.Sc. degree. At the examinations essays only should be set and due allowance should be made for any original work and for practical efficiency in the laboratory.

XIII. BOTANY.

I.Sc. (Medical Students).

1. The main resemblances and differences between plants and animals—brief account of the structure and life-history of selected types of unicellular plants and in still less detail, of the structure and life-history of selected types of multicellular plants to illustrate alternation of generations.

2. *Morphology.*—General account of the structure of selected types from the Thallophyta, Bryophyta and Pteridophyta. A more detailed account of the morphology of Phanerogams according to organs.

3. *Classification.*—General account of the classification of Phanerogams—species—hybrids—genera—families—orders—nomenclature—modes of describing plants—a more detailed account of a few selected natural families to illustrate the larger divisions of classification.

4. *Vegetable anatomy.*—The cell—cell wall—cell contents—formation of new cells—tissues, their kinds and origin—microscopic structure of selected Thallophyta and Bryophyta and of the various organs of the higher plants.

5. *Elementary plant physiology.*—Illustrated by simple experiments.

Practical course—

Dissection of flowers involving the use of a pocket lens, needles and a penknife.

Examination of the morphology of selected plants which should illustrate at the same time different natural families of economic importance.

Several field excursions, if possible.

Microscopical examination of chief plant tissues.

B.A. and Subsidiary B.Sc.

1. *General morphology.*—Including a study of the life-history of selected plants to illustrate the gradual ascent in complexity of structure and reproductive cycle from the Thallophyta to the Spermaphyta.

2. *Histology.*—Structure and development of cells; formation of tissues; various types and systems of tissue; structure and development of the various organs and members of the plant body.

3. *Vegetable physiology.*—The chemical elements of plants. Mode of ascertaining composition. Physiological classification of tissues. Food of plants. Elaboration of the food. Movements of the sap. Food of epiphytic, saprophytic, parasitic and

carnivorous plants. Respiration of plants. Conditions for nutrition, growth, and reproduction. Phenomena of growth. Temperature and light in relation to plant life. Movements in plants. Modes of reproduction.

4. Principles of classification as illustrated by common plants. Outlines of any modern system of classification.

Practical course—

1. Identification of plants.
2. Microchemical reaction of cell contents and cellulose and its modifications. Microscopical examination of various plant tissues.
3. Physiological experiments on the functions of chlorophyll. Transpirations, respiration, germination of the seed, and movements of growth.

Principal B.Sc.

The Subsidiary course and in addition—

1. General morphology of—

   (*a*) Phanerogams, including a study of the following subjects in detail:—branch systems; phyllotaxis; origin of members.

   (*b*) Cryptogams.

   General morphology should be studied with reference to œcological principles.

2. *Histology.*—Cell-contents and their microchemical reactions. A detailed study of the structure and development of cells and tissues.

3. A more detailed study of vegetable physiology.

4. The study of the life-history of the principal types of Thallophyta, Bryophyta, Pteridophyta and Spermaphyta.

5. The principles of classification as illustrated by common plants; outlines of the chief modern systems of classification.

6. A knowledge of the systematic position, morphological characters, use and cultivation of some of the more important economic plants (rice and other cereals, pulses, vegetables, fruit-trees, sugar-producing plants, tea, the fan-palm, the bamboo, a few important timber trees, indigo, jute, cotton).

7. Distribution of plants. Brief sketch of the influences that regulate the present distribution of plants.

Practical course—

1. The making, staining, and description of microscopical sections of plants.
2. Identification of plants.
3. Drawings of dissections of flowers and of microscopical sections.
4. Physiological experiments—

   Experiments on the functions of chlorophyll, its formation and decomposition; experiments on the relation between starch formation and external conditions; the influence of external conditions on transpiration; experiments on respiration; movements of growth; germination experiments.

Honours B.Sc.

The same as the principal Pass course treated more fully, with the following additions:—

(*a*) A more extensive knowledge of the characterization and classification of tissue systems from the physiological point of view.
(*b*) Experiments on the food of plants: organic food-stuffs; mycorrhiza in relation to humus; experiments with saccharomyces, parasitic fungi and nitrogen bacteria. Experiments on osmosis and plasmolysis. The process of repair of damages suffered by tissues. The decay of plants; putrefaction bacteria. Ferments.
(*c*) Historical botany: a short sketch of the occurrence of plants in former geological periods. A few of the more important type fossils of the Bengal coal-fields.
(*d*) Botanical Œcology treated with special reference to Indian conditions.
(*e*) Geographical Botany, with special reference to Indian flora.
(*f*) General biological principles: theory of evolution, heredity, variation, Mendelism.

Practical course—

1. Collection and preservation of specimens, exercises in the dissection and identification of dried plants, identification of species belonging to the more difficult orders (*e.g.*, Umbelliferæ, Amarantaceæ, Orchidaceæ, Arvidaceæ, Graminaceæ).
2. Microscopical examination and a more detailed practical study of any genus out of the following groups:—

I.—Algæ.	III.—Bryophyta.
II.—Fungi.	IV.—Pteridophyta.

3. More advanced histological technique, and the use of microscopical appliances and physiological instruments.

M.Sc.

The student should carry his general studies to a more advanced stage and should also make a special study of one or other branches of the subject. Some courses of lectures should be given on advanced subjects, and the greater portion of the student's time will be spent in the laboratory where the professor will require him to carry out practical work of an advanced character.

XIV. PHYSIOLOGY.

Subsidiary B.Sc.

1. Chemical composition of the animal body.
2. Chemistry of food, blood, lymph and urine.
3. Phenomena of muscular contraction.
4. General nutrition, including circulation of the blood and lymph, respiration and the process of digestion, absorption, secretion and excretion.

5. Production and regulation of animal heat.
6. Dietetics.
7. Structure and physiology of the nervous system.
8. The mechanism of voice and speech.
9. The organs of sense, their structure and functions.

Practical course—

1. Practical exercise on the chemistry of proteins, carbohydrates, food-stuffs and the products of their digestion, blood, bile and urine.
2. Preparation and examination under the miscroscope of the chief tissues and organs of the body.
3. Practical instruction in the use of the more common physiological instruments, and the graphic methods of performing simple experiments on the functions of muscle, nerve and heart.

Principal B.Sc.

The Subsidiary course and in addition—

1. *Chemical physiology—*

   Ultimate and proximate principles of the body.
   Chemistry of proteins, carbohydrates, fats, lipoids and minerals found in the body and food.

2. *Histology—*

   Microscopical appearance of blood, lymph and milk.
   Histology and development of the cell.
   Segmentation of ovum and formation of germinal membranes.
   Minute structure of the various organs and tissues of the body.

3. *General physiology—*

   Properties and general physiology of contractile tissues.
   Functions and general physiology of nerve-cell and nerve-fibres.
   Circulation of the blood and lymph.
   Respiration.
   Processes involved in digestion and absorption of food.
   Internal secretion.
   Excretion by kidneys, skin, lungs and liver.
   Production and regulation of animal heat.
   Principles of metabolism and balance of nutrition.
   Dietetics.
   Mechanism of locomotion, voice and speech.
   Physiology of the central nervous system and the autonomic system.
   Physiology of the organs of sense.
   Reproduction.

Practical work—

1. Chemistry of proteins, carbohydrates, fats, lipoids, milk, blood, digestive juices and urine with special reference to clinical work.
2. Histological methods and the minute anatomy of the various organs and tissues of the body.
3. The use of important physiological instruments, and the methods of physical investigations on the functions of various organs and tissues as embodied in a number of experiments to be specified from time to time.

Honours B.Sc.

The Honours course will include the same subjects as the principal Pass course treated more fully.

Practical course—

The same as principal Pass course with the addition of the following:—

1. A more advanced course of bio-chemistry and physiological application of physical chemistry.
2. More advanced histological technique and a detailed knowledge of the minute structure of the brain and the organs of sense.
3. A number of additional experiments to be specified from time to time.

M.Sc.

As under Botany.

XV. DOMESTIC ECONOMY AND HYGIENE.

[For Women.]

Junior Course.

A.—Hygiene—

(1) Eighteen lectures on the body—

(*a*) Structure of the body, bone and muscle, etc.	3	lectures.
(*b*) Blood and circulation	1	lecture.
(*c*) Respiration	1	„
(*d*) The organs, their structure and functions ...	3	lectures.
(*e*) Digestion	3	„
(*f*) Excretion	1	lecture.
(*g*) Temperature	1	„
(*h*) Brain and nerves	2	lectures.
(*i*) Infections and micro-organisms	2	„
(*j*) Defences of the body	2	„

(2) Six lectures on personal hygiene—

(*a*) Food, its function, varieties, preparation, etc.
(*b*) General hygiene of a student's life, fresh air, exercise, sleep, etc.
(*c*) Care of the skin, hair, eyes, mouth, teeth, etc.
(*d*) Clothing.
(*e*) Common disturbances of health to which girls are liable, and their prevention.
(*f*) Hygiene of the mind, habit formation, etc.

(3) Three lectures on the hygiene of the house and its surroundings—sanitation, air, water, building, space, site, disposal of refuse, etc.

(4) Six lectures on sick nursing in the family—

(*a*) The sick room.
(*b*) The nurse.
(*c*) Details of nursing.
(*d*) Common ailments, their prevention and their treatment.
(*e*) Accidents and emergencies.
(*f*) Serious illnesses.

(5) Six lectures on the hygiene of children—

(*a*) The baby, its feeding, bathing, clothing and general management.
(*b*) The little child, its feeding, etc.
(*c*) The older child, its general care.
(*d*) The baby in illness.
(*e*) The little child in illness.
(*f*) The older child in illness.

All these lectures should be made as practical as possible and illustrated with diagrams, pictures, models, etc.

B.—Domestic Economy—

(1) Twelve lectures on elementary science with special reference to domestic economy.

(2) Twelve practical lessons on the preparation and the cooking of Indian food, the actual work being done by the students.

(3) Eighteen practical lessons on European vegetarian cookery. This course should comprise bread-making, soups, entrées, puddings, cakes, jellies, eggs, etc.

(4) Twelve practical lessons on European non-vegetarian cooking: fish, meat, eggs, etc.

Indian students might take courses (2) and (3), and Anglo-Indians courses (3) and (4). At least one morning in the week should be devoted to cooking, etc. Two kitchens might be provided for the use of the students—an Indian one with complete Indian cooking outfit, and a European one with a simple cooking stove of European construction and the necessary utensils. If possible a gas or oil stove might be used. All the cleaning and preparation of the vegetables, etc., should be done by the students.

(5) *Practical instruction in marketing.*—The prices and quality of the articles of diet should be studied.

(6) *Household accounts.*—Practical tuition should be given in this subject. Each student should be taught to keep an account of her own expenditure and required to do so. The accounts of the hostel might be undertaken, under supervision, by the students in turn.

(7) *Laundry work.*—A small laundry for the use of the students should be provided, and they should be taught the finer work of washing, starching and ironing.

The students should be taught (but not as part of the University course) practical house-keeping by giving them a part in the domestic management of the hostel.

Marks should be given for each practical class, and in the granting of certificates a high standard in practical work should be exacted.

Senior Course.

(1) Elementary natural science with special reference to domestic economy, in continuation of the junior course, and more advanced practical work.

(2) Child study—

(*a*) Physical development of the child and the care of the child in health and sickness.

(*b*) The mental and moral development of the child: its instincts and habits: forms of expression: characteristics of the normal and abnormal child.

(*c*) The education of young children.

XVI. ISLAMIC STUDIES.

Madrasah or School Course.

The Sub-Committee recommend the following scheme of work:—

	Hours per Week.			
Class.	VII.	VIII.	IX.	X.
Language and Literature ...	14	11	10	10
Kalám	...	...	2	2
Elementary Fiqh	...	3	2	2
Logic	...	...	2	2
Total ...	14	14	16	16

They consider that the following statement represents a suitable course of studies for the four years:—

(1) LANGUAGE—

Grammar—Mabádi-ul-Arabiah.
Composition—Daraját-ul-Insha, Parts I and II.

(2) LITERATURE—

Prose—Selections from—

1. Ikhwán-us-Safá.
2. Kalíla wa Damna.
3. Alf Lailah.
4. Atbáq uz-zahab, by Isfahání.
5. Adab-ud-Dunya wadin.
6. Salásil ul Qirá'ah (Parts I—IV).
7. At-Tarbiyat wal Ádáb ush-Shar'íah (the whole).
8. Al Fakhri.
9. Ayyuhá-l-walad, of Ghazáli.

The selection should always include some historical reading.

Poetry—

1. Lámiah of Tughrái.
2. Easy selections from Díwán Hassán Ibn Thábit and Díwán Abí-l'Atáhiya.

The books should be so studied as to form a course of progressive difficulty.

(3) FIQH—

Classes VIII and IX—Multaqal-Abhur (Ibádat portion).
Class X—Sirát ul Mustaqím, by Shaikh Zayyáti (Cairo).

(4) LOGIC—

Lubábul-Ishárát, by Imám Rázi.

(5) KALÁM—

Class IX—Al Fiqh ul Akbar.
Class X—'Aqáid, by Sháh Wali Ulláh.

Junior College Course.

(1) LANGUAGE—

Rhetoric—

Ilm-ul-Adab, Part I, Insha portion, by Professor Cheikho (Beyrout).

(2) LITERATURE—Selections from—

Prose—(1) Maqámát uz Zamakhsharí.
(2) Badíuzzamán-al-Hamadáni.
(3) Khutab un-Nabi was Sahábah.
(4) Salásil-ul-Qirá'áh (Parts V and VI).

Poetry—
(1) Diwán Abí-l-'Atáhiya.
(2) Qasidat ul Burdah (whole).
(3) Qasidat ul Farazdaq on Imám Zain ul-'Ábidín

(3) DINIYÁT—

Korán—Ten parts.

Tafsír—Baizávi, four parts (not from the beginning).
Fauzul-Kabír, by Sháh Walí Ulláh.

Hadis—Musnad-i-Dármi.

Fiqh—
(1) Multaqá al-Abhur (Mu'ámalát).
(2) Sirájiah.

Usûl—Khulásat-ul-Usûl.

Kalám—Maálim-ud-Din, by Imám Rázi.

(4) ISLAMIC HISTORY—A general outline of Islamic History, and, in greater detail, the lives of the Prophet and the first four Caliphs, as in Sirat Ibn Sayid un-Nás and Tabaqát Ibn Sa'd. An elementary knowledge of the geography of the subject.

B.I.

(1) LANGUAGE—

Rhetoric—Daláilul-I'jáz.
Prosody—'Aruz us Sakkáki.

(2) LITERATURE—Selections from—

(*a*) *Prose*—
(1) Maqámát ul-Harírí (ten Maqámát).
(2) Nahj ul-Balághah.
(3) Kámil, by Al-Mubarrad.
(4) Khutab ul-'Arab (from Al 'Iqd al-Faríd).

(*b*) *Poetry*—
(5) Hamásah.
(6) As-Sab'-ul-Mu'allaqát.
(7) Diwán ul Mutanabbi.

(*c*) A general outline of the History of Arabic Literature.

(3) KORÁN—Twenty parts.

(4) TAFSIR—Baizávi, ten parts (including Baqarah).

(5) KALÁM—Muhassal, by Imám Rázi.

(6) HADIS—

(1) Tirmizi.
(2) Kítáb ul-Hujaj, by Imám Muhammad.
(3) Muqaddimat Ibn Saláh.

(7) FIQH—

(1) Al Arkán ul-'Arba'ah, by Bahrul-Ulum.
(2) Hídáyah (selections from Volume II).

(8) USÛL—Tauzîh.

(9) HISTORY—The period of the Omayyides and Abbasides as illustrated by the following works :—

(1) Tarikh ul-Ya'qúbí (Part II).
(2) Futuh-al-Buldan, by Balazuri.
(3) Ma'árif, by Ibn Qutaibah.
(4) Taríkh Abí-l-Fidá.

A knowledge of the geography relating to the subject will be expected.

M.I.

I.—LANGUAGE AND LITERATURE—

The subjects will be—

(*a*) Language and Composition,
(*b*) Literature, and
(*c*) One of the following :—

Philology.	History of Literature.

Language—

Rhetoric—

(1) Faráid, by Mulla Mahmud.
(2) Asrár ul-Balághah, by Jurjáni.
(3) Falsafat ul-Balághah, by Dumit (Beyrout).
(4) Translation of Aristotle's Rhetoric, by Ibn Rushd (Averroes).

Literature—

Prose—

(1) Kitáb-ul-Aghani (Rannat-ul-Masális-Wal-Masani, Volume I) (Beyrout).
(2) Muwazana bayn Abí Tammám wal Buhturí.
(3) Maqámát ul-Harírí.

Poetry—

(4) Díwán Imrí il Quais.
(5) Díwán Zuhair Ibn Abí Sulmá.
(6) Díwán un-Nabighah.
(7) Luzumiát 'Abí'l-'Alá al Ma'arrí.

Philology—

Including a knowledge of one of the cognate languages.

History of Literature—

(1) Khitab ush-shi'r wash-shu'ará, by Ibn-i-Qutaibá (Ed. De Goeje).
(2) Taríkh-ul-Adab, by Qirwáni.
(3) Taríkh Ádáb il-lughat il-'Arabiah, by Diyáb Bey (Cairo).
(4) Naqd-ush-Shir'-wash-Shu'ará.
(5) Nicholson's History of Arabic Literature.

II.—TAFSIR—

(1) Kashsháf, by Zamakhshari.
(2) At-Tafsir ul-Ahmadi.
(3) Ma'álim ut-Tanzil.
(4) At-Tafsir ul-Kabír (up to the end of Part I).
(5) I'jáz ul-Qurán, by Báqilláni.
(6) Asbáb un-Nuzúl, by Wáhidí.
(7) Itqán, by Suyûti.

III.—HADIS—

(1) Bukhári.
(2) Muslim.
(3) Abu Dáûd.
(4) Nasá'í.
(5) Ibn Májah.
(6) Muwatta Imám Málik.
(7) Taháwi.
(8) Muqaddimat Fath ul-Bárí.

IV.—FIQH AND USÛL—

Fiqh—

(1) Hidáyah (selected chapters from Volumes III and IV).
(2) Fiqh Ibn Rushd (Averroes).
(3) Al-Ashbáh wan-Nazáir, by Ibn Nujaim (Cairo).
(4) Al-Muqábalát (comparison between laws of Islam and other laws).
(5) Collections of Legal decisions of the Courts of Egypt.

Usûl—Kashf ul Asrár (Usûl ul-Bazdavi).

V.—KALÁM AND PHILOSOPHY—

(1) Fasl ul-Maqál and two other treatises by Ibn Rushd (Ed. M. J. Mueller).
(2) Taháfut ul-Falásifah, by Imám Ghazáli.
(3) Taháfut ut-Taháfut, by Ibn Rushd.
(4) Sharh ul-Maqásid (Iláhiyát portion).
(5) Al Madaniyat wal-Islám, by Shaikh Muhammad 'Abduh (Cairo).
(6) Hujjat Ulláh ul-Bálighah, by Sháh Walí Ullah, and Hekmat-ul-Ishraq by Sheikh Shihabuddin.
(7) A classical Arabic book based on the Aristotelian system of Philosophy, *e.g.*, a work of Avicenna, Averroes, or Farabi.
(8) History of Greek philosophy: special stress being laid on the Platonic, Aristotelian, and neo-Platonic systems.
T. De Boers' "History of Philosopy in Islam."

VI.—ISLAMIC HISTORY—

(1) General Islamic History.

Compulsory ... ... 2 papers.

(2) An Essay, in Arabic, to be written on one of at least four optional subjects, dealing generally with the civilization, art, science and polity of Islám, Islamic political theory, or a criticism of the methods of leading Islamic Historians.

Compulsory ... ... 1 paper.

(3) The history of the Omayyides and Abbasides from the establishment of the Caliphate at Damascus to 1258, special attention being paid to one or two printed original authorities.

Compulsory ... ... 2 papers.

(4) One of the following subjects, studied as far as possible with reference to printed original authorities. (The student will be expected to have some knowledge of the conditions and history of the countries immediately before their conquest by the Muhammadans, and special stress will be laid on the sociological and economic effects of Muhammadan rule.)

Compulsory ... ... 2 papers.

A.—Persia.

(Introductory)—The Sassanian Empire.

The Muhammadan Conquest.

The History of Persia up to the end of the Safavi Dynasty.

B.—India.

(Introductory)—Hindu conditions before the conquest.
The earlier Dynasties to Babar.
The Moghul Empire to the battle of Panipat, 1761.

C.—Egypt and North Africa.

(Introductory)—The Byzantine Empire from Heraclius onward.
The Caliphate of Cairo to the Turkish conquest.

D.—Spain.

(Introductory)—The Visigothic power in Spain.
The Caliphate of Cordova to the fall of Granada.

E.—The Turks to 1572.

The Seljukian Turks from the earliest times.
The Osmanli power to the battle of Lepanto, 1572.

F.—The Turks to 1908.

From the fall of Constantinople, 1453, to the fall of Abdul Hamid, 1908.
Special attention should be given to the Near Eastern question.

(5) One of the following:—

(*a*) The study of some caliph, statesman, king or scholar (with original authorities).

(*b*) A special subject in the history of Islamic thought (with original authorities).

(*c*) The Arabic geographers and the historical geography of the caliphate (with original authorities).

Compulsory ... ... 1 paper.

A candidate for the M.I. degree in Islamic History may present a thesis in Arabic in place of either subjects Nos. 2 and 5 above, *or* of subject No. 4, on a historical subject approved by the Board of Studies.

Scheme of Examination.

(1) Intermediate Examination—

(1) Language and Literature ... ... 2 papers.

(2) Divinity—

Hadis	... 1 paper	}	
Korán and Tafsir ...	... 1 „	}	4 „
Fiqh and Usûl ...	... 1 „	}	
Kalám	... 1 „	}	

(3) Islamic History ... ... 1 paper.

The relative value to be given to the different subjects may be as follows:—

English	... 3
Language and Literature ...	... 2
Divinity	... 4
Islamic History	... 1

The English examination will be the same as in the Intermediate examination in Arts. Candidates must pass in each of the four subjects.

(2) Examination for the Bachelor's Degree—

The replies should be written in Arabic.

Group A—

(1) Language and Literature—3 papers, an essay and an oral examination. The essay and the oral examination each to have half the value of a paper.

(2) Hadis ... ... 1 paper.

(3) Tafsir and Kalám ... ... 3 papers.

Group B—

(1) Language and Literature ... ... As in group A.

(2) Fiqh and Usûl ... ... 3 papers.

(3) History ... ... 1 paper.

The relative value to be given to the different subjects may be as follows:—

Group A—

English	... 3
Language and Literature ...	... 4
Hadis	... 1
Tafsir and Kalám	... 3

Group B—

English	...	...	...	... 3
Language and Literature			...	... 4
Fiqh and Usûl		...	...	... 3
History	...	...	...	... 1

The English examination will be the same as in the examination for the Pass B.A. degree. Candidates must pass in each of the four subjects.

NOTE.—At a meeting held in November to consider further some points in the report of the sub-committee in the light of a letter received from Dr. Horovitz, the following modifications were introduced into the proposed course:—The subjects of *History of Literature* and *Philology* were made alternative instead of obligatory in the M. I. course, and the scope of the latter was altered so as to include an elementary knowledge of a cognate Semitic language. In this way the course has been rendered more satisfactory without its difficulty being increased. Under *Philosophy* in the M. I. course the subject of elementary psychology was removed and the history of Greek philosophy and of philosophy in Islam was substituted for it. The Arabic geographers were included as an alternative subject of study for the M. I. course. A few prescribed books were changed and a few additional books suggested.

The following list of books has been furnished by Dr. Horovitz as an illustrative selection of modern European works on Islamic studies. These and other similar works should be included in the library:—

LANGUAGE—

(*a*) *Philology—*

(1) Barth, Nominalbildung in den Semitischen Sprachen.
(2) Brockelmann, Grundriss der vergleichenden Grammatik der semitischen Sprachen.
(3) Fraenkel, Die aramaeischen Fremdwoerter im Arabischen.
(4) Noeldeke, Die semitischen Sprachen.
(5) Noeldeke, Beitraege zur semitischen Sprachwissenschaft.
(6) Wright, Lectures on the comparative grammar of the Semitic languages.

(*b*) *History of Literature.*—Apart from Nicholson,

Brockelmann, Geschichte der Arabischen Literatur.

(*c*) *Philosophy.*—T. de Boer, History of Philosophy in Islam.

ISLAMIC HISTORY—

(1) *General Islamic History—*

(*a*) Arnold, Preaching of Islam.
(*b*) Cætani, Annali dell' Islam.
(*c*) Mueller, Der Islam im Morgen und Abendlande.
(*d*) Huart, Histoire des Arabes.
(*e*) Lane Poole, Muhammadan Dynasties.

(2) *Civilization and polity of Islam—*

(*a*) Goldziher, Vorlesungen über den Islam.
(*b*) Goldziher, Muhammedanische Studien.
(*c*) Kremer, Geschichte herrschenden Ideen der Islam.
(*d*) Kremer, Culturgeschichte des Orients.
(*e*) Kremer, Contributions to the History of Islamic civilization.
(*f*) Encyclopædia of Islam.

Also various chapters in E. G. Browne's "A Literary History of Persia."

(3) *The History of the Omayyides—*

(*a*) Muir, the Caliphate.
(*b*) Wellhausen, Das Arabische Reich.
(*c*) Wellhausen, Prolegomena zur aeltesten Geschichte des Islam.
(*d*) Lammens, Le regne de Muawiya.
(*e*) Lammens, Le regne de Yazid.

The principal original authorities are—Tabari, Masudi, Yaqubi, Balazuri, Ibn a Athir.

(4) *Persia—*

(*a*) Noeldeke "Geschichte Araber und Perser."
(*b*) Christensen, L'Empire des Sassanides.
(*c*) Chapters in Grundriss der iranischen Philologie, ed. Geiger and Kuhn.
(*d*) Browne—A Literary History of Persia.

(5) *Egypt—*

(*a*) Butler—The Arabic Conquest of Egypt.
(*b*) Lane-Poole—History of Egypt in the Middle Ages.
(*c*) Van Berchem—Materiaux pour servir à un Corpus Inscriptionum Arabicarum.

(6) *Spain—*

(*a*) Dozy—Histoire des Musulmans d'Espagne.
(*b*) Dozy—Recherches sur l'Histoire et la Literature de l'Espagne.

Journals dealing with the history and civilization of Islam—

Der Islam Herausgegeben, von C. H. Becker.
Revue du Monde Musulman (chiefly the present-day development).
The Moslem World, edited by Zwemer (from a missionary point of view).

General oriental journals—

1. Journal of the Royal Asiatic Society.
2. „ „ Asiatic Society of Bengal.
3. Journal Asiatique.
4. Zeitschrift der Deutschen Morgenlandischen Gesellschaft.
5. Wiener Zeitschrift fur die Kunde des Morgenlandes.

XVII. ENGINEERING.

The Sub-Committee considered that the following statement, the figures in which denote hours a week, represents an appropriate division of time and studies for the four years' course in Engineering:—

Subjects.	1st year.	2nd year.	3rd year.	4th year.	Total.
A.					
Mathematics	7	7	...	...	14
B (Science).					
Physics	16	12	4 (Chemistry)	...	32
Chemistry					
Geology	...	...	2	...	2
C (Applied Mechanics).					
Strength of Materials	...	..	8	10	18
Theory of Structure					
Hydraulics					
D.					
Descriptive Engineering	3	5	5	5	18
E.					
Drawing	4	6	6	9 (Projects)	25
F.					
Surveying	About 100 hours to be fitted into the course in the first year, and in the second and third years a special period of training.				
G.					
Heat Engines	...	...	4	5	9
Electro-technics, etc.					
H.					
Workshops *	6	6	6	6	24
Field Engineering					
K.					
Accounts	...	...	1	1	2
Total ...	36	36	36	36	144

* *N.B.*—In addition to the compulsory work, facilities should be given to students to attend the workshops in their spare time, if they wish to do so.

GROUP A—MATHEMATICS.

The course should be framed with a view not only to extend the student's knowledge of pure mathematics, but also to make him intelligent, quick and accurate in computation. Throughout the course special attention should be paid to graphic methods.

I. *Mathematics* (in first and second years)—

(1) Simple analytical geometry of two and three dimensions.
(2) Mensuration.
(3) Elements of differential and integral calculus, including curve tracing.
(4) Simple differential equations.
(5) Abbreviated methods of computation:

The slide rule.
The use of tables and formulæ.
Approximate methods.

II. *Mechanics* (in first and second years)—

(1) Theoretical mechanics.
(2) Demonstrations, with practical instruction in elementary mechanics.
(3) Elementary applied mechanics:

Young's Modulus.
Direct Stresses.
Simple Beams.

GROUP B—SCIENCE.

In these subjects the University course will be followed with such omissions and modifications as may be found desirable for engineering students.

I. *Physics* (in first and second years)—

The "principal" B.Sc. Pass Course.

II. *Chemistry*—

(*a*) General: The "subsidiary" B.Sc. Pass Course (in first year).
(*b*) Engineering (in second and third years)—

The principles and methods of chemistry as illustrated in the following:—

the metallurgy and properties of the commoner metals of industrial importance;
the chief alloys of these metals and the conditions under which they are found;
furnaces, fuels and furnace gases;
the chemistry of accumulators;
the estimation of the commoner metals in their ores, oxides and alloys;
analysis of steel and cast iron, red and white lead, and of the impurities in water;
limestone, lime mortars and cements.

III. *Geology* (in third and fourth years)—

Elementary Geology and Mineralogy, including Physical Geography, with special reference to the nature of rocks and to water-supply.

GROUP C—APPLIED MECHANICS.

These subjects will be taught in special connection with practical work in the Engineering Laboratory.

I. *Strength of Materials and the Theory of Structures* (in third and fourth years), including graphical methods of treatment and design. Practical testing of materials.

II. *Hydraulics* (in third and fourth years).

GROUP D—DESCRIPTIVE ENGINEERING.

These subjects will be connected with workshop practice, and with field work as far as possible.

Materials of construction ...	First and second years.
Building construction	
Roads	
Bridges, ferro-concrete and railways	Third and fourth years.
Sanitary engineering	
Irrigation	

GROUP E—DRAWING.

In the first and second years, drawing will be dealt with as a special subject. In the third and fourth years it will form an important part of other courses.

I. *The Principles of Drawing* (in first and second years), as applied to Engineering; copying engineering and machine drawings; the making of drawings from sketches (*see* Sibpur Calendar for first and second year drawing course).

II. *Estimating.*

GROUP F—SURVEYING.

Surveying will be taught in the college in the first year, and in the field during the second and third years in special periods of training apart from the regular college routine.

GROUP G—

I. *Heat Engines* (third and fourth years)—

The theory of heat engines.
The working and testing of boilers.
Steam-engines.
Gas-engines.
Oil-engines.
Petrol-engines and appliances used in connection therewith.

II. *Machinery* (third and fourth years)—

The simple principles of power transmission by mechanical, electric, hydraulic and pneumatic methods.

Shafting, gearing, ordinary machine tools, hydraulic and pneumatic tools and their uses in constructional work.

Cranes and other lifting appliances, blowers, pumps.

III. *Electro-technics* (third and fourth years)—

Principles and practice of electric lighting and power transmission in their simpler applications.

Electrical testing as required in practical work.

GROUP H—WORKSHOP PRACTICE AND FIELD ENGINEERING.

In the first and second years, and subsquently when time permits, the student will receive instruction in simple practice in the carpenter's shop, smith's shops, foundry and fitting and machine shops. In the third and fourth years, the time allotted for workshop practice and field engineering will be devoted largely to a course of systematic training in practical engineering. The course should include the construction of simple steel structures, such as trusses, etc., building construction including foundations and brick-laying, handling of pulleys, erection of derricks and shears, use of pile-drivers, temporary bridges, the setting out of earthworks, erection of heavy weights, and any other subject which the space and resources available will allow. For railway work a short siding with a few points and crossings and signals of different types should be laid, by means of which the principles of track-laying and track-maintenance can be demonstrated. The course is intended to enable the student to get some acquaintance with practical problems, and the actual manual work will, as far as possible, be done by the student himself.

XVIII. TEACHING.

B. T.

First Year's Course.

A.—CHILD STUDY—

(*a*) *Physiology.*—The principal organs and functions of the body systems, with special reference to the nervous system in man and in a few animal types, to be prescribed from year to year.

(*b*) *Hygiene.*—Sanitation in the home, the school and the community. Personal habits. Physical exercise, including games. "First Aid Treatment" of the sick and injured. Common infectious diseases and physical defects.

(*c*) *Practical work in* (*a*) *and* (*b*).—The recognition and description of types and specimens. The use of a microscope. The school course of physical exercise. "First Aid Treatment."

EXPLANATORY NOTE.—To understand the child it is necessary to know his body in structure and function. It is impossible to understand modern psychology from the point of view of the educationalist without a fair knowledge of the physiology of the nervous system, and this in turn depends on the physiology of the other systems.

In most advancing countries of the world, it is being found necessary to introduce medical inspection of school children. The effects of the strain of modern life and of the conditions of school work need to be watched and treated most carefully. This can be done far more efficiently by the teacher, who is in contact with the child, than by an occasional visiting medical man, provided that the teacher has sufficient knowledge, and is free to send doubtful and serious cases to a doctor. There are numerous cases in which a child is set down as stupid, who simply suffers from some defect of sight or hearing of which he himself is unconscious. Care must be taken against the outbreak of any infectious disease, and parents must be advised as to the necessary precautions to be taken. Curvature of the spine, incipient St. Vitus' dance and similar ailments may be discovered by a teacher, who has been forewarned by his training, in time to secure suitable treatment. At the same time it is infinitely less costly to rely upon teachers for this work than to employ an expensive medical staff, such as is used in other countries, which could not possibly be afforded in India.

The study of animal types has been introduced, so that man may be understood in his relations with the rest of the animal world, and that in psychology the teacher may be able to use comparative methods.

The course in child study in the second year is in continuation of, and developes out of, the first year course in Physiology, upon which, also, experimental Psychology is largely dependent.

B.—THE ORGANIZATION OF EDUCATION—

The system of education in Bengal, and in one or more countries outside India, to be prescribed from time to time. A comparison of the Bengal system with those of other parts of India. A sketch of the history of education in India. The Bengal regulations and principal statistics in education. The relations and responsibilities of teachers, inspectors, parents and public bodies.

C.—METHOD—

(*a*) *General.*—The organization and management of schools, classes and hostels. Curriculum, time-table and discipline. General methods and use of apparatus. The preparation of notes and courses of lessons. The library and the museum. Home work.

(*b*) *Special.*—The content, method and apparatus of the three subjects selected from E (*b*) (below).

(*c*) *Practical.*—Blackboard work and the construction and use of school apparatus.

D.—THE LIFE AND WORK OF A SELECTED EDUCATIONIST.

E.—PRACTICAL TEACHING—

(*a*) Each student must give at least 50 lessons, each to be of not less than half an hour's duration.

(*b*) The 50 lessons will be given in three of the following nine subjects:—

Subjects.

(*i*) Modern languages and literature.
(*ii*) Ancient languages and literature.
(*iii*) History.
(*iv*) Geography.
(*v*) Nature Study and Science.
(*vi*) Mathematics.
(*vii*) Manual work.
(*viii*) Drawing.
(*ix*) Kindergarten.

The student will select his subjects under the approval of the Principal.

(*c*) The preparation of notes and courses of lessons.

Second Year's Course.

A.—PRINCIPLES OF EDUCATION—

(*a*) *Child study.*—Psychology treated chiefly from the physiological and pedagogical points of view. The elements of sociology. The characters of individual children. The foundations of the school curriculum.

(*b*) *Ethics.*—Conduct and character. The moral development and education of the child. The individual and the community. The school as an institution. Educational ends. Speculative and historical enquiries as far as possible will be excluded.

(*c*) *Elementary Experimental Psychology.*—Study should be mainly directed towards the relations of sense perception and activity, and memory. The details of work required will be indicated year by year.

B.—METHOD—

(*a*) The content of one subject taken from E(*b*) above. A very detailed knowledge will be expected.

(*b*) The special methods and apparatus used in teaching the subject selected in (*a*).

(*c*) Practical—

(*i*) Each student will give 30 lessons in the subject selected under (*a*) and (*b*).

EXPLANATORY NOTE.—In the first year the 50 lessons are spread over three subjects. In that year technical difficulties, such as those of blackboard work and the drawing up of notes of lessons, are overcome. In the second year the course is of a more theoretical character, and as the practical work is now done by a skilled workman, it may be reduced in amount. Thirty lessons therefore may be considered enough, especially as they will all be concentrated on one subject. These lessons will be spread over at least one school term.

(*ii*) A detailed course of a year's study, suitable for 40 weeks, for one branch of his selected subject, in a high school class, will be drawn up by each student. He must understand its relation to the rest of the work of the class.

EXPLANATORY NOTE.—Practical work of this character is of great importance to specialists, who have to organize their own subjects throughout a school, to headmasters and to inspectors. The specialist is here compelled to study the relation of his subject to others in the school curriculum so as to prevent his acquiring a narrow point of view.

C.—HISTORY OF EDUCATION—

(*a*) *General.*—The evolution of educational ideals. Attention should be paid to Oriental as well as to Western education.

(*b*) *Special.*—A selected subject or period.

D.—EDUCATIONAL CLASSICS—

Two or three selected works which have substantially affected the development of modern education. Some acquaintance with the life and the circumstances of each author will be expected.

E.—VOLUNTARY WORK—

Any special piece of work in education may be offered, subject to the approval of the Board of Studies. Permission may be granted to two or more students to work together.

EXPLANATORY NOTE.—In education a vast field is opened for investigation: race characteristics, class interests, individual peculiarities, materials and methods of instruction and similar subjects are all waiting to be studied, before a system of education, really suitable to modern conditions in India, can be developed. It is hoped that in the college opportunities for guidance and discussion will encourage students and teachers to open up useful lines of research, which later on will lift their daily work from the deadening plane of mere school routine to a higher and more inspiring level.

Diploma.

The course for the diploma will be identical with the first year's course for the B. T., except that for Physiology should be substituted "Principles of Education and their application" (as follows):—

> "Mental and moral development and its physically associated conditions. Cultivation of attention and interest. Assimilation, association and retention of knowledge. Temperament, disposition and character. Educational values and the theoretical basis of the curriculum. The theory of the five formal steps. Characters of individual children."

A candidate who has passed the first part of the examination for the degree of B. T., but is unable to proceed to the second year's course for the degree may, with the permission of the Special Board of Studies, be allowed, after not less than one year spent in teaching, to present himself for the diploma examination in the "Principles of Education," and after passing that examination will receive the diploma.

Scheme of Examination.

An examination should be held at the end of each year of the course, and students should be required to pass in each subject of examination. They may be classified into those who pass and those who pass with distinction.

I.—First Year for B. T.

A. Child study—

(*a*) Physiology	...	...	...	1 paper, 2 hours.
(*b*) Hygiene	...	...	...	1 „ 2 „
(*c*) Practical in (*a*) and (*b*)		...	...	Equivalent to one paper.

NOTE.—In the practical examination in (*a*) and (*b*) the candidate will be required to recognize and describe specimens, to use the microscope, to perform and to teach the school course in physical exercise, and to show himself competent to deal with injuries, etc., according to the "First Aid Treatment."

B. Organization of Education ... ... 1 paper, 3 hours.

C. Method—

(*a*) General	...	...	...	1 paper, 2 hours.
(*b*) Special	...	...	...	1 „ 2 „
(*c*) Practical	...	...	...	Equivalent to one paper.

NOTE.—A candidate may be called upon to explain and illustrate the use of school apparatus, to devise apparatus to meet special cases and to use the blackboard efficiently. He may offer work done under this head during the session, under the college guarantee that it is his own work, such as relief maps, globes, lines of time, science apparatus or apparatus for teaching geometry, algebra, or arithmetic, etc.

D. The life and work of a selected educationalist ... 1 paper, 3 hours.

E. Practical teaching ... ... Equivalent to two papers.

(*a*) Each candidate must produce the college certificate that he has taught the required number of lessons.

(*b*) Notes of one lesson in each of the selected subjects must be submitted to the examiners, who will choose one to be given to a class in their presence. They may demand that a second or a third lesson shall be so given, and may question the candidate on the work offered or matters closely related to it.

NOTE.—Since the examination of 80 men would take a very long time if every individual were examined, it will be necessary in the diploma and 1st year B. T. examinations to rely upon a grouping system. The Principal will be required to arrange the candidates in four groups, from which a certain number will be chosen by the examiners to give their lessons. In this way the grouping will be standardized.

(*c*) The candidate will be required to prepare within a given time the notes of a lesson selected by the examiners from his own subjects. He may be asked to explain or to give the lesson.

II.—Second Year for B. T.

A. Principles of Education—

(*a*) Child study	...	...	...	1 paper, 2 hours.
(*b*) Ethics	...	...	...	1 „ 2 „
(*c*) Practical elementary experimental Psychology				Equivalent to one paper

B. Method—

(*a*) } Special methods and apparatus ... 2 papers, 2 hours each.
(*b*) }

The candidate will be required to have a thorough and detailed knowledge of the content of the selected subject.

(*c*) Practical Teaching ... ... Equivalent to two papers.

(*i*) Each candidate must produce a college certificate that he has actually given 30 lessons in his selected subject.

(*ii*) He will offer the course of a year's study, which he has prepared, as laid down in the course of studies. From this he will select one lesson for which he has prepared notes, and notes of two other related lessons. The examiner will witness one or more of these three lessons delivered to a class, and may discuss the whole scheme or any part of it with the candidate. Every candidate will be examined individually for the degree.

C. History of Education—

(*a*) General ... ... 1 paper, 2 hours.
(*b*) Special period or subject ... ... 1 „ 2 „

D. Educational Classics ... ... 2 papers, 2 hours each.

E. Voluntary work will be considered in deciding whether a candidate has passed with distinction.

APPENDIX II.

Number of Students taking Different Subjects.

THE statements in this appendix relate only to arts and science subjects and they exclude students of the colleges for women and the well-to-do classes, for which separate staffs are provided.

2. We may assume that the 1,900 students of the four general colleges are divided as follows:—

Junior Arts ...	... 750	Senior Arts ...	... 630
„ Science	... 300	„ Science	... 220

Provision must also be made for instruction in English to 110 students of Islamic studies and to 90 students of Medicine in the junior stage, and to 90 students of Islamic studies in the senior stage; also for instruction in science subjects to students of Medicine and Engineering.

3. For Junior students the provision by subjects may be estimated as follows:—

English ...	... 1,250	Arabic ...	... 25
Vernacular language	... 1,050	Persian ...	... 45
Mathematics ...	... 710	Chemistry ...	... 490
History ...	... 450	Physics ...	... 410
Logic ...	... 720	Botany ...	... 90
Sanskrit ...	... 620	Zoology ...	... 90

4. For senior students in Arts, the following arrangement has been taken as a basis of calculation:—

	Pass.	Honours.
English ...	... 670	50
Vernacular language	... 240	...
Mathematics ...	... 50	10
History ...	... 90	20
Economics ...	... 100	20
Philosophy ...	... 80	20
Sanskrit ...	... 100	20
Arabic ...	... 15	5
Persian ...	... 25	5
Chemistry ...	... 20	...
Physics ...	... 10	...
Botany ...	... 10	...
Zoology ...	... 10	...

5. The sub-committees for science subjects have framed their estimates for staff, accommodation and equipment so as to allow for a due variety in grouping, and it is not necessary to work out in detail the complicated combinations which may be allowed in the various subjects and their "subsidiary," "principal" and "honours" courses.

APPENDIX III.

Report of the Sub-Committee for Finance on a System of University Accounts.

General system.—Government will pay direct from the treasury the salaries of the teaching and other staff of the University, and will supplement the latter's resources by a fixed annual grant for maintenance. The receipts from fees, etc., will not be sufficient to meet the charges on account of staff and establishment; hence the simplest arrangement will be for the University to credit all fees and miscellaneous receipts to Government, and for the Government so to regulate the amount of its grant that it will suffice to meet all maintenance charges.

Central Accounts office.—A central organization for accounts will be cheaper and more convenient than a number of detached college and departmental offices, and we have therefore framed a scheme based on one large central office.

Receipts of the University.—The receipts of the University may be classified as follows:—

(*a*) Fees and fines from students. (*b*) Receipts from other sources.
(*c*) Grant for maintenance.

Fees will fall under the following heads:—

(1) Entrance (*i.e.*, students' registration).
(2) Tuition (College and University).
(3) Hostel.
(4) Examination.
(5) Graduates' registration.
(6) Games.
(7) Union.

(*a*) Of these (1) to (5) will, in pursuance of the arrangement recommended above, be credited to Government, while (6) and (7) will be credited to funds outside the University accounts. Fines levied for non-payment of fees or for misconduct, loss or breakage will also be credited to Government.

(*b*) Receipts from other sources, such as sale-proceeds of old stores and materials, will similarly be credited to Government.

(*c*) The grant for maintenance will be credited to the University.

Mode of payment of fees, etc.—Fees will be paid by the student direct into the accounts office. The University will not receive part payments on account. The student will first present himself with the money before the accountant who, after satisfying himself by reference to the demand register that the amount tendered is correct, will direct the tenderer to pay the money to the cashier. The accountant will then draw up an acknowledgment in a standard receipt form, which will be handed over to the cashier with instructions to receive the money. After the money

has been paid, the cashier and the accountant will both sign the acknowledgment, which will then be made over to the tenderer.

A student desiring to enter the University will first be accepted provisionally by the Principal of a college, and he will then pay his registration fee at the central office. He will not be enrolled as a member of the college until he produces the University receipt for the registration fee. Similarly, no student will be permitted to present himself for an examination until he produces the University receipt for his examination fees.

As a protection against fraud, students should be strictly enjoined not to leave the counter without obtaining acknowledgments in the prescribed forms for the money paid by them.

Receipts from miscellaneous and other sources will be dealt with in the same way, and acknowledged on a separate standard receipt form.

All receipt forms should be machine-numbered in a consecutive series so that the fraudulent abstraction of a copy may be easily detected. They should also be stitched together into bound volumes of a fixed number and kept under lock and key, being given out only when actually required for use.

Accounts for receipts.—The cashier will enter receipts in a diary kept by him, but the regular accounts will be kept by the accountant's branch. They will consist of—

(*a*) The daily collection register. | (*b*) The demand and recovery register.

The daily collection register will be posted from the counterfoils of the receipts issued during the day, and after the postings and totals have been checked by the accountant or one of his senior assistants, the register will be placed before the Registrar with the collections of the day. The Registrar will check the entries and will formally pass and initial the register. The collections will then be disposed of in the manner indicated in the register, the amounts to be credited to Government being remitted to the treasury, while the amounts to be credited to the union and games funds will be transferred to their respective chests and credited in their respective cash-books. These remittances and transfers should not be delayed beyond the day of collection or the following working day. The treasury receipts obtained for the remittance will be numbered and filed in a consecutive series, and their numbers and dates should be quoted against the corresponding entries in the daily collection register. All money remaining in the University office will be under double lock, one key being kept by the cashier, and the other by the Registrar or some other responsible person.

The demand and recovery register is designed to show whether a student has paid all his dues to the University. The payment of fines will be watched through the same register on information furnished by the colleges. There should be a separate demand register for each college, the particulars to be entered in the column "Roll No." being the year of admission and the Roll No. assigned to the student on admission. Each student should be described by the year of his admission, the initial of his college, and his serial number, *e.g.*, 1920 D. 45.

Government grant.—The Government grant may be drawn in a single amount from the treasury on a special bill form and placed in the Bank of Bengal to the credit of an account in the name of the University. On receipt of the amount it will be credited in the University cash-book. Cheques should be drawn under the joint signatures of the Vice-Chancellor and the Registrar or the Warden, as the case may be.

Payments of the University—Salaries and establishments.—The salary and establishment charges of the University will be paid by Government direct at the treasury. For this, the bill forms in use in Government offices should be used and the rules in the Civil Service Regulations should be strictly followed in regulating acting allowances and leave. It will not be necessary to pass these payments

through the cash-book; it will be sufficient, for purposes of record and statistics, if copies of bills presented for payment at the treasury, are kept in the office with the actual date of payment noted on each. All work in connection with the preparation of bills and disbursements of pay should be done in the college offices instead of in the University office, as this course will be more convenient, the colleges possessing a more direct knowledge of the men and their services.

Budget.—Before the commencement of each year and as soon as the amount of the Government grant is known, the Finance Committee of the Council will prepare a budget estimate of expenditure and will submit it to the University Council for approval. A copy of the budget should be sent to every member of Convocation. After approval, the estimates will serve as an authority for the spending authorities to incur expenditure under the ordinary heads of contingency, but all items of a special or unusual nature or which exceed a certain fixed amount should be submitted to the University Council for previous sanction.

Contingencies.—Contingencies will be paid out of the grant for maintenance. The method of payment will be by cheque on the Bank signed by the Vice-Chancellor and Registrar or Warden, as the case may be.

Record of expenditure.—A contingent register in the usual form will be maintained to watch the progress of expenditure with reference to budget allotments. In addition to this, special registers must be maintained in the following cases:—

(1) Remuneration of examiners.
(2) Payments to contractors and tradesmen.
(3) Scholarships.
(4) Library.
(5) Stock account of instruments and apparatus in the possession of the laboratories and other departments.
(6) Travelling allowances.

Cash-book.—The University will keep a cash-book for the record of all transactions on account of University funds. The cash-book will indicate on the receipt side the Government grant for the year, and on the expenditure side the charges paid out of it from day to day, classified under standard heads. As the University funds will be lodged in the Bank and all payments will be by cheque, the closing balance in the cash-book on any day will agree with the balance in the Bank pass-book of that day. The pass-book should be compared every week with the cash-book.

Ledger.—To work out the monthly and annual totals of the expenditure recorded in the cash-book, a ledger will be maintained in the usual form with separate pages for the standard heads of expenditure. Other heads of expenditure may be added both in the cash-book and the ledger.

Annual account.—A complete and correct account of the receipts and charges of the University will appear in the Government accounts, where the fees and other receipts collected will be shown as receipts of the University, and the salary and establishment charges disbursed and the grant paid for maintenance will appear as University expenditure. If, however, it is considered necessary to compile an annual account from the accounts kept by the University, such an account may readily be prepared. The figures for fees and receipts may be obtained from the daily collection register, while those for salary and establishment charges may be derived from the copies of bills retained in the offices of the University and of the colleges. The other figures required will be available in the ledger.

Audit.—The accounts of the University, colleges, and endowment funds should be audited annually under arrangements to be made by the Comptroller and Auditor-General.

Union and Games funds.—These two funds will be outside the University accounts. The following books should be kept:—

(1) Cash-book. | (2) An annual account.

The cash-book form should provide for monthly and annual totals being struck under the necessary heads on both the receipt and the expenditure sides, as well as for working out balances. The figures required for the annual account will therefore be readily available in it. The column "Fees" on the receipt side will be posted from the daily collection register of the University accounts.

Hostel mess funds.—These funds will also be outside the University accounts, and the following books should be kept:—

(1) A cash-book. | (2) A recovery register.

The cash-book will shew the total expenditure incurred on messing during the month as well as the advances paid by the individual students. The total expenditure incurred will be distributed amongst the students, and the share payable by each as well as the total amount of the advances paid by him will be carried forward to the recovery register. The balance still payable will then be recovered, and the recoveries effected will be credited in both the recovery register and the cash-book. The mess superintendent and the students will initial the recovery register in token of their acceptance of the entries. On the annual opening of the colleges, the University will give an advance to each of the mess funds to enable them to commence operations.

Endowment funds.—These are funds placed in the hands of the University for various purposes connected with the encouragement of education. They will, on receipt, be invested in Government or other securities according to the instructions of the donors. The investments will be kept in the Bank of Bengal for safe custody.

The income of the funds will be the interest realized on the investments, and the expenditure will be the charges for the grant of scholarships, prizes, medals, etc., and for the realization of interest.

Such funds will have a separate account at the Bank of Bengal, as well as a separate pass-book.

For a detailed record an endowment ledger will be maintained in which each fund will appear as a separate head of account. The ledger will be closed and balanced monthly to admit of an agreement being made between the ledger balances and the pass-book balances.

After the close of the year an annual account in the usual form will be compiled from the ledger for each fund, in which the amount of investments held will also be shown. The figures on account of investments will be checked with those shown in the safe custody certificate furnished by the Bank before the annual accounts are published.

NOTE.—Mr. C. B. Sen has prepared a series of forms for the accounts described in this appendix. These forms will be found of great assistance when the scheme worked out, but we have not thought it necessary to print them in our report.

APPENDIX IV.

Report of the Sanitary Commissioner.

I VISITED Dacca on the 9th August and carefully inspected the sites of the various colleges and the existing buildings that are to form part of the new University. There are several important matters to be dealt with, and it is better to treat them separately.

(1) In company with Mr. Nathan I inspected the sites on which it is proposed to erect the new colleges. These include a girls' college, a college for the sons of zamindars and others, a Muhammadan college and possibly a Civil Engineering College. In all cases I approve of the sites that have been suggested by the University Committee. I consider that the Ramna is a distinctly good site, and I have no suggestions to offer as regards the various positions chosen. They all appear to me to be very suitable and satisfactory from every point of view. Due care has been taken not to overcrowd the locality in any way.

(2) By far the most important point I wish to discuss is the method of removal of sewage and sullage from the new settlement. It is obvious that there are two ways in which this can be accomplished (1): by a system of underground drains, and (2) by the hand-removal method so common in most parts of India. Before going into details it should be pointed out that, in the first place, the whole of the University settlement will consist of a number of colleges, in each of which anything from 200 to 400 students will reside: over 2,000 students will be accommodated within the precincts of the University. It is obvious therefore that, to make the whole settlement thoroughly sanitary, it is necessary to have a high level of efficiency throughout so important a colony. The University itself will be a modern and thoroughly up-to-date institution, and should be looked upon as a model of everything that is best in the way of an educational institution. It will therefore be extremely objectionable, in a settlement such as this, to go in for a second-rate and deficient system of sanitation. The sanitary arrangements must be in keeping with the general excellence of the plan of the University. Consequently it would, in my opinion, be extremely unwise to employ the hand-removal system.

It seems hardly necessary to waste much time in describing the many objectionable points in what is commonly known as the hand-removal arrangement. They are perfectly apparent to anyone who has any knowledge of municipal work in this country. These defects will only be the more apparent when placed in a setting such as will be provided by the new University. Ample latrine accommodation will be necessary for each college and hostel. I most emphatically object to the installing of the usual type of latrines, as they always give rise to nuisance and are at best very insanitary arrangements. Educational institutions in Calcutta, where the water-type latrine is possible, realize the advantages of this system. Again, night urinals and night latrines will also be necessary actually inside or very near the various hostels. It is practically impossible, without properly flushed underground drains, to keep these places sanitary and free from nuisance even with the most scrupulous supervision. The difficulties in the way of removing the urine by hand are very great and are never really overcome in actual practice.

Besides this serious defect, the hand-removal system presupposes carts, bullocks, a large staff of mehters and supervisors and sundry other inefficient and objectionable items. On the whole, I consider that it will be necessary to have at least 2 sanitary Inspectors, 30 sweepers and 15 nightsoil carts for the various colleges, and experience may very easily show that this staff is inadequate.

Next, we come to the subject of the cook-room waste and household water. It must be remembered that the 2,000 students will reside in the colleges; consequently, the cooking and preparing of food for the occupants will be done at each hostel; kitchen arrangements will form part of each college building. It may be taken that the removal of the kitchen waste from this large community will be an extremely difficult, and practically an impossible, task by the hand-removal system. The University will not have the advantages that are present in a large city, for in such places sullage water can be led away by a system of *pucca* drains. It will be absolutely impossible to remove sullage water by such a system in Dacca; besides the cost of these drains would be nearly equal to that of underground drains. Consequently, the only possible methods of removal are (1) by making cess-pits and removing the contents by carts and hand labour, and (2) underground drains. At the very lowest computation 10 sullage carts would be necessary for the University community, and even with very careful supervision the arrangement would be deficient, insanitary and distinctly bad. The alternative is to put in sewers, when all the objections disappear.

Let us examine this suggestion further. The advantages of this proposal are many and of very great importance.

(1) It must be pointed out that in a beautiful settlement, such as there is every reason to believe the University will be, nightsoil carts, sullage carts and a large community of sweepers, bullocks, etc., will be an eyesore and a great cause of nuisance. It will be entirely inconsistent with the general high standard of excellence of the community as a whole, to have nightsoil carts going along the main roads.

(2) In all educational institutions it is absolutely necessary to have a very high standard of sanitary excellence, as it exercises a profound educational influence on the students. The educational influence of a thoroughly sound water-removal latrine is much more than is imagined, and I maintain that to perpetuate the hand-removal latrine, in a place like a University, is simply to impress the students with the fact that, in the whole range of sanitary science, there is nothing better than this disgusting arrangement. All educational authorities are extremely strong on the point, that nothing but the very best and most up-to-date methods should ever be adopted in colleges and schools.

(3) By making use of the water-removal system the whole difficulty of urinals for day and night latrines for night use disappears entirely. With the water-removal system, it will be possible to make thoroughly sound and sanitary latrines, if neceesary, actually in the building itself.

(4) We have already dealt with the subject of household waste water and kitchen waste. It has been shown that the difficulties of removing this by anything else but sewers are enormous. It is also equally obvious that with an underground system of drains, perfectly simple and sanitary arrangements for the washing of pots and kitchen utensils and for the keeping clean of cook-houses, etc., can be designed. It should also be remembered, as previously stated, that no system of *pucca* drains will answer the purpose in the various colleges, as they do in large cities.

From the above remarks, the overwhelming superiority, from every point of view, of an underground system of drains is apparent. Indeed, I consider that it is absolutely necessary to go in for this system, and I am very strongly opposed to any other.

Again, in a comparatively small community such as the University, underground drains will in the end be cheap. From what has already been said it will be obvious that a large staff of sweepers, many buffaloes and animals, a large number of carts, and a thoroughly satisfactory supervising staff will be required. This would mean a

very large recurring charge, and I feel confident that this sum capitalized would more than provide funds to meet the initial cost of the underground system. In conclusion I propose that the Committee request that the Sanitary Engineer and myself draw up a sketch project and give the estimated cost of the above suggestions.

Before leaving this subject, the question of water-supply must be briefly discussed. The new Dacca water-works are in a very sound and efficient state. The water is both of good quality and plentiful. I consider that the amount of water necessary for the University community alone, with a water-removal system of conservancy, will be about a lakh or a lakh and a quarter gallons per diem. The population of the community will be, roughly speaking, 4,000, including students, professors, servants and everybody connected with the University. A lakh of gallons will give 25 gallons per individual, and a lakh and a quarter 30. With this amount of water there should be no difficulty at all in providing a water-removal latrine and water-connected privies. The Dacca water-works can very easily supply this quantity of water. The only thing that will be required will be an overhead balance tank holding about a quarter or a third of this amount. The Dacca water-works, without any increase of the existing plant, can supply this amount of water by working one extra hour per diem. There is also plenty of room in the works for an additional Jewel filter which would give this amount in eight hours. Consequently, it will be observed that the water-supply will present no difficulty, and inadequacy of water cannot be used as an argument against the underground and water-removal system proposed.

Concerning the removal of rubbish, waste paper, etc., a small staff will be necessary. As a beginning I consider that 12 scavengers, 6 carts and 6 cartmen should be employed. This staff will be necessary whatever system of removal of sewage is employed.

3. During my visit I also carefully inspected the buildings which will be converted into hostels. The new Secretariat building will undoubtedly make an extremely fine hostel. The rooms are of suitable size, well lighted and well ventilated. The sanitary arrangements at the end of each of the three blocks will require remodelling, but very little structural alteration will be required. The two buildings already existing in Dacca College, namely, the Physics laboratory and the Engineering class-rooms, will make very satisfactory hostels, but the latrines and urinal arrangement will require designing and fitting to the existing buildings, as no accommodation is provided at present.

The building which was designed for the Government Press is nothing like so satisfactory for a hostel, the rooms being very large and not adaptable for division on economical lines. However, there is no real difficulty in the way of dividing these into cubicles, but, as is usual in entirely changing the use of a building, a good deal of waste of space will occur. Urinals and night latrines will also be required in this building, and a very suitable situation has been found. I do not propose to go into the details of sanitary arrangements necessary. All these will be worked out by the Sanitary Engineer and myself if the principles given in this report are agreed to by the University authorities. In conclusion, I simply wish to point out the utter inconsistency of spending a large sum of money on a thoroughly sound and up-to-date institution, but of having deficient and mediæval sanitary arrangements. To make the place a success, a high standard of excellence must also be extended to the sanitary arrangements generally. The only way in which this can be done is by a water-removal arrangement and the laying down of sewers. The cost will not be excessive. and this method is the only one consistent with modern ideas and with the requirements of the University.

W. W. CLEMESHA, M.D., D.P.H., MAJOR, I.M.S.,
Sanitary Commissioner, Bengal.

CALCUTTA,
The 15th August 1912.

APPENDIX V.

Report of the Sanitary Engineer.

THE Sanitary Commissioner, Bengal, has forwarded me a copy of his note on the sanitary arrangements for the new University of Dacca, in which he recommends an underground system of sewers in place of hand-removal, and also makes some remarks with regard to the water-supply. These recommendations have been accepted by the President of the Dacca University Committee, and I have been asked to prepare a sketch project for both sewerage and water-supply.

2. I understand that I am now only required to formulate a scheme in outline with an approximate estimate of the cost. The information supplied me, although somewhat indefinite, is sufficient for this purpose, but it will probably be found necessary to make some alterations when the details are finally worked out. The positions of the elevated reservoir, the pumping station and the sewage disposal works, and the general arrangement of sewers, water pipes and connections can be fixed only provisionally at this stage. The figures given in the estimate may, however, I think, be taken as fairly safe.

3. In the estimate below I have provided for outside latrines for servants, but I have not included anything for internal fittings, such as internal water closets, urinals, lavatories, bathrooms, sinks, etc. The Government Architect and the Plumbing Expert are in a much better position to do this than I am, and these fittings are essential parts of the buildings.

4. The figures given me for the number of persons in the University, including professors, students and servants, amount to about 4,000 in all. These do not apparently include the Technical College which may possibly be located beyond the Nilkhet Road. I have taken as the basis of the present scheme 4,500 persons to be supplied with 25 gallons of water a head. This should be ample; anything beyond will be extravagant waste.

Besides the above number, there is a possibility of the University extending to the northwards in the Ramna area, in which case this will have to be subsequently included in the scheme.

So far as the sewerage is concerned, the only way in which this possibility affects the scheme is in the depth of the well at the pumping station and the size and arrangement of the engine house so that the pumping plant can, if necessary, be increased; for the future, the main sewer serving the Ramna area will come down the Ramna Road and connect with the present proposed system at the receiving well.

For the water-supply the only point needing consideration in connection with this possible extension is the capacity and elevation of the reservoir, as none of the mains now proposed will serve the Ramna area.

Sewerage Scheme.

5. I have recently prepared a sketch project for the sewerage of the populated parts of Dacca City, which provides for taking the whole of the sewage of the town to a site to the east of the railway and for treating it there.

In this project a main sewer has been provided terminating at its upper end at the corner of College Road and Secretariat Road. This sewer can be continued up College Road to Government House Road and, when it is laid, all the sewage of the University area will eventually be received by it at this point.

This sewer will probably not be constructed for some years, until a few other and more urgently required sewers have been completed, and in the meantime it will be necessary to make temporary arrangements for disposing of the University sewage. In no case could the University area or the Ramna area be drained into the main sewerage system by gravitation, and this has been fully recognized. The proper arrangement therefore will be to put the pumping station in such a position that it can eventually pump into the town sewers, and in the meantime can pump to temporary purification works at a point where the filtered effluent can be discharged without causing a nuisance.

6. The general arrangement will be that the sewers will gravitate to a receiving well at the pumping station, which I propose should be placed somewhere at the junction of Dilkusha Road and Ramna Road. Owing to the flatness of the ground the main outfall sewer has to be rather deep, nearly 20 feet in one place. So far as I can judge of the nature of the subsoil, there should be no serious difficulty in laying a sewer at this depth.

The Dacca main sewerage project is designed on the partially separate system; that is to say, the sullage, sewage and a moderate amount of surface water will go into the sewers, whilst the surplus storm water will go down the open drains.

I propose that the University sewers should be designed on the same lines. As the slop water and the kitchen wastes will be taken into the sewers as well as the fæcal matter, a certain amount of rain water also is certain to get into them, and in fact it is desirable that it should, for it will assist in keeping them flushed. There will, however, be no difficulty in arranging that the quantity of rain water should be kept within narrow limits.

I have accordingly designed the capacity of the sewers in this scheme on the same basis as the main sewers in the town, viz., to take six times the average dry weather flow at 25 gallons per head per day, or 150 gallons per head per day,

At the head of each sewer there will be an automatic flushing tank of 300 gallons capacity set to go off three or four times a day. The total amount of flushing water required for the main sewers will not exceed 5,000 gallons per day, or approximately 1 gallon per head of the population served.

The sizes and gradients of the sewers are so arranged that there will be a daily dry weather velocity at the period of maximum rate of flow during each day of not less than 2¼ feet per second.

7. At the pumping station there will be three 6 b.h.p. oil-engines each driving a centrifugal pump capable of lifting 250 gallons per minute. One of these will work by itself during the dry weather. During rainstorms two will be together capable of pumping the total discharge, and the third engine and pump will be a stand-by in case of a breakdown.

Space will be left in the engine house for the addition of a fourth engine if this should ever become necessary.

8. The sewage will be pumped through a 9 inch C. I. rising main to the disposal works, which I propose should be placed on the bank of the nullah running eastwards from the new Government House.

The exact method of purification can be discussed later between the Sanitary Commissioner and myself. In the meantime I have estimated for septic tanks to

hold 15 hours' flow and filters 4 feet deep designed on the basis of 1 square foot of filter area to 16 gallons of tank effluent. I do not propose that more than three times the dry weather flow should be treated in the filters; anything over this will automatically overflow into the nullah.

As these works are only intended to be temporary, no very elaborate system of distribution over the filters will be necessary.

9. When the Dacca main sewerage scheme is completed, the University pumping station will be connected to the head of the College Road sewer by a 9-inch rising main. The sewage will then be pumped in this direction and the University sewage disposal works will be dismantled.

Water-supply.

10. The water-supply is a comparatively simple matter. I propose to have an elevated reservoir holding 80,000 gallons somewhere near the railway workshops. This reservoir will have a top water tank of 135 R. L., and a draw of 120 R. L. It will be connected with the town supply. At present I have no proper plan of the Dacca distribution system, so cannot say exactly how this connection will be made. I have made a provision in the estimate of Rs. 4,000 for the connection works, which should be sufficient.

The distribution pipes will vary in diameter from 8 inches to 2 inches C. I. pipes. The branch connections will be made with 2-inch C. I. pipes and 1½ inch, 1 inch or ¾ inch G. I. pipes.

Estimate of Cost.

11. I estimate the cost of these works as follows:—

	Rs.	Rs.
(*a*) *Sewerage*—		
Main sewers	78,000	
Manholes	7,500	
Automatic flushing chambers	1,500	
Ventilating shafts	2,500	
Branch pipes and connections ...	44,500	
Manholes, inspection chambers, disconnecting traps, etc.	4,000	
Outside latrines and connections ...	4,000	
Engine house and other buildings ...	8,000	
Pumping station—		
Pump well	4,000	
3 No. 6 b. h. p. oil-engines and centrifugal pumps	6,000	
Rising main	8,400	
Outfall works—Septic tanks, filters, outfall channel, etc.	22,500	
Total ...	1,90,900	
Add for contingencies 10 per cent., say ...	19,100	
Total ...	2,10,000	2,10,000

	Rs.	Rs.
(*b*) *Water-supply*—		
Elevated reservoir	55,000	
Distribution mains and branch pipes ...	42,000	
Sluice valves, stop cocks, hydrants, etc. ...	5,000	
Provide for connection to town main, meters, etc.	4,000	
Total ...	1,06,000	
Add for contingencies 10 per cent., say ...	10,000	
Total ...	1,16,000	1,16,000
Total cost of sewerage and water-supply		3,26,000

12. My estimate of the total working cost of these schemes, including pumping and treating sewage, cleaning sewers and connections, repairing water pipes, stop cocks, etc., is Rs. 6,000 per annum.

This does not include any sweeper's work within the buildings nor the cost of the water. With regard to the latter some arrangement will presumably be made with the Dacca Municipality. Probably the best arrangement will be to take the water in bulk at a fixed rate per 1,000 gallons. The quantity required will be in the first instance about 100,000 gallons per day, and, supposing this were obtained at 4 annas per 1,000 gallons, the cost would be Rs. 25 a day or Rs. 9,125 per annum.

If such an arrangement were made, the University would of course be exempt from any further water rates.

G. B. WILLIAMS,
Sanitary Engineer, Bengal.

CALCUTTA,
The 27th September 1912.

NOTE.—The estimate of capital expenditure includes Rs. 40,000 for the Engineering College and School and Rs. 16,700 for the College for the Well-to-do Classes.

APPENDIX VI.

Estimate of Electrical Adviser.

THE following are the main heads of the estimate of capital expenditure framed by the Electrical Adviser to the Government of Bengal:—

		Rs.
1.	Muhammadan College	25,000
2.	College for Well-to-do Classes	45,000
3.	College for Women	12,500
4.	Engineering College	47,000
5.	Dacca College, 5th hostel	2,500
6.	Houses for 55 Indian officers	21,000
7.	Houses for European subordinates	5,250
8.	Hospital	1,875
9.	Gymnasium, Museums and Union	11,250
10.	Five Laboratories	40,000
11.	Additions and alterations in existing buildings, including the new hostel of the Jagannath College	32,000
12.	Service lines	16,625
13.	Contingencies	10,000
14.	Underground wiring for lighting main avenue ...	22,000
	Total ...	2,92,000

Other buildings have been, or are in course of being, fitted for electric light and fans. Apart from underground wiring for lighting the main avenue, the streets of the University area will be lit under the agreement made between the Government and the Company, and due allowance is made for this in the estimate for recurring expenditure.

APPENDIX VII.

Note by Mr. T. H. Richardson on the Staff of the Civil Engineering College.

I DISAGREE with the proposal that the permanent Professor of Engineering should be imported direct from England, since he would be absolutely ignorant of Indian conditions and of the very considerable modifications required to make English practice suitable to these conditions.

It is of course very important that every advantage should be taken of any development in English (as well as in American and continental) practice, but it must be remembered that local practice depends on variations in local conditions, *e.g.*, the relative cost of labour and plant, the cost of skilled labour, facilities for the repair of elaborate plant, etc.

Every Assistant Engineer brought into this country is primed with "the result of the latest and most up-to-date English experience," with the result that he is inclined to look on his more experienced seniors as ignorant Silurian fossils. It is not till after he has learned by a few years' experience that it dawns on him that his Executive Engineer knows just as much as he does about modern English practice, but that his Indian work has taught him to reject what is unsuitable to the conditions under which his work has to be carried on. A professor of Engineering would never have the same opportunities for adjusting his views, especially at Dacca where he must be more or less cut off from intercourse with engineers of Indian experience.

Teaching experience is only of secondary importance; in any case it is of nothing like the same value for senior and professional classes as it would be in the case of school and elementary teaching. It may well be doubted if experience in teaching technical classes in England is of much use for a teacher of Indian students whose point of view is so entirely different. Indian students often try to remember instead of to understand what is told to them, and it is often not easy, even for one who has had experience with them, to detect when they do not understand the lecture. Anyhow English teaching experience is of nothing like so much importance as the knowledge of the Indian as an engineer, which knowledge is gained by working with him in the Public Works Department or on other practical work. It should also be remembered that a large part of an Indian engineer's work consists of teaching his subordinates and contractors. He is not, as often at home, a mere critic of his contractor's work; he has to train his staff and workmen and to do the work done at home by the contractor's agent, who is always a fully qualified engineer and not merely a provider of unskilled labour, as out here.

Considerable doubt has been expressed as to the prospects of the temporary Professor of Civil Engineering on his return to his department. If his prospects are injured by his term of service at the college, no allowance will induce the best men to come. Unless the best men are deputed, we would be better without them. The mere fact that it was ordinarily a "pagal-failed," or even a second-class man who accepted the deputation, would of itself injure the prospects of any first-class man who might occasionally be induced to take up the post. Personally I have not the slightest doubt that a man who spent from his fifth to his tenth year of service away from the practical work of his department would not be sought out by Superintending Engineers for charge of a division under them.

I consider it would be better if the period of deputation should be reduced to three years. This would not injure a man's prospects, and good work at the college would be more likely to help him on in his own department. No doubt a man would be more useful at the college after three years' work there, but a first-class man fresh from practical work, whose prospects depended on retaining his touch with practical work, would be more useful for three years than a second-class man who must feel that his prospects or promotion were being injured, and that his only chance was to remain permanently at the college.

If the permanent professor were ordinarily selected from Executive Engineers who had, as assistants, served for three years as temporary professors, we would have several from whom to select with some knowledge of their characters and capabilities; we would then be much more likely to select a suitable man than if we had to take him, in the dark, from the teaching staff of an English University, the authorities of which would naturally try to retain their best men.

As regards the Professor of Mathematics, I am afraid that a man would tend to stagnate who was tied down to teach only the rather narrow course which it is essential to adopt for engineering students, while it would be an advantage for the general University students if at least one of their professors were to see the subject from a somewhat practical standpoint. I therefore think that it would be a gain both to the engineering and general students if, like the science professorships, this one were a University rather than a college appointment.

On these grounds I disagree with paragraph 3 of section 10 of the Report on Engineering (staff) and would substitute for it the following:—

In laying down the qualifications for the two professors of Civil Engineering the main principle to be held in view is that, in order to meet Indian requirements, the teaching and methods of practice at the college should be the result of the latest and most up-to-date Indian experience.

One of the professors should therefore be a man with the highest possible qualifications as regards both theoretical and practical training. He should also have, if possible, some experience in teaching. He should have taken his degree at one of the Universities where engineering is made a speciality, other qualifications being equal, a graduate of a tutorial and residential University being given the preference. He should have several years' experience of practical engineering in India, and finally he should, if possible, be selected from those who have served as temporary professors at the college. He should be appointed in the first place for two years, till confirmed, retaining his lien on his permanent post. These qualifications would need to be paid for, but it should be possible to get such a man on a salary of Rs. 1,000 to Rs. 1,500.

The other professors should be borrowed from the Public Works Department (railway branch included). A specially selected Assistant Engineer of about five years' service might be taken. The post should be considered as an Executive Engineer's. The man selected should be gazetted as officiating Executive Engineer and be granted a deputation allowance so that he shall draw about Rs. 200 over what he would draw as Assistant Engineer. The deputation should be for three years, and it should be understood that the engineer accepting it will not be granted privilege leave or furlough (unless on medical certificate) during his period of service at the college. It cannot be too clearly laid down, or urgently recommended, that a man of high qualifications and character is necessary, and it is essential that the appointment should be regarded as a prize in the service.

As in the case of science, mathematics should be taught by University and not by college professors. If a professor is to remain fresh, it is important that he should have a wider field than the somewhat narrow course which it is essential to lay down for engineering students. The University can be trusted to select for this duty men who will not consider their science to be degraded by being applied to the service and well-being of man.

SIMLA, T. H. RICHARDSON.

The 3rd September 1912.

APPENDIX VIII.

Income from Fees.

					Per mensem.	Per annum.
					Rs.	Rs.
I. College Tuition Fees—						
Dacca College	360	J	at Rs.	6	2,160	
	300	S	„	7	2,100	
New College	290	J	„	6	1,740	
	250	S	„	7	1,750	
Jagannath College	290	J	„	4	1,160	
	250	S	„	5	1,250	
Muhammadan College	280	J	„	4	1,120	
	240	S	„	5	1,200	
Women's College	24	J	„	4	96	
	16	S	„	5	80	
College for the well-to-do classes	120		„	40	4,800	
Total					17,456	2,09,472

J=student of the junior course, and S=student of the senior course.

II. University Fees—					
Junior students in Science ...	350	at Rs.	1	350	
Senior „ „ Arts ...	586	„	2	1,172	
„ „ „ Science ...	280	„	3	840	
„ „ „ Islamic studies	90	„	2	180	
Junior students of Medicine ...	90	„	2	180	
Senior „ „ „ ...	70	„	5	350	
Students of Engineering ...	60	„	15	900	
Graduate students in Arts ...	100	„	10	1,000	
„ „ „ Science ...	50	„	12	600	
Students of Law	180	„	6	1,080	
Total				6,652	79,824

			Per mensem.	Per annum.
		Rs. A.	Rs.	Rs.
III.	*Hostel Fees* (*see* Chapter XIII)—			
	1,710 students (including graduate students) of the Dacca, New, Jagannath, Muhammadan, Women's and Engineering Colleges	at 2 8	4,275	51,300
IV.	*University Entrance Fees*—			
	700 Freshmen	at 2 0	...	1,400
V.	*Graduates' Registration Fees* (initial)*—			
	500 Graduates	at 5 0	...	2,500
VI.	*Riding fees, Engineering students*—			
	20 students	at 5 0	100	1,200
	GRAND TOTAL	...	28,483	3,45,696

* Nothing has been included on account of the recurring fees payable by registered graduates, since it is not possible to make a reliable estimate.

APPENDIX IX.

Estimate of Capital Expenditure.

SECTION 1.

BUILDINGS.

	Rs.
(1) Dacca College—	
Main building: enlargement of library and introduction of eight skylights	2,245
Conversion of laboratory into 3rd hostel and lecture theatre	3,777
Conversion of School of Engineering into 4th hostel ...	5,578
Dining room and kitchen for 150 for 3rd and 4th hostels	28,434
Conversion of an existing building into 5th hostel ...	28,530
House of Superintendent of 5th hostel	16,000
Re-erecting and enlarging quarters for menials ...	21,642
	1,06,206
(2) Jagannath College—	
Conversion of Secretariat Press into a college and hostel	12,730
New hostel for 260 students and 20 graduates ...	1,85,400
Dining halls, kitchens, quarters for 25 servants, servants' latrine, two day latrines, masonry ghat and steps for tank, and washing platform	74,256
	2,72,386
(3) New College—	
Converting upper storey of Secretariat building into a hostel by making one end of each wing into quarters for two Indian Educational Service officers, erecting quarters for their 12 servants, making partitions, etc.	11,270
Dining rooms and kitchens for 400 students	85,600
Quarters for 24 graduates	36,500
	1,33,370

	Rs.
(4) *Muhammadan College*—	
Main building (including hostel)	3,30,000
Dining hall (including furniture)	25,300
Kitchen, servants' quarters, servants' latrine, students' latrine, slaughter platform, shed for hanging meat, pens for goats and fowls, and washing platform ...	30,740
	3,86,040
(5) *College for Women*—	
Main building, including hostel and quarters for the staff	1,37,900
Quarters for 20 servants	11,882
	1,49,782
(6) *College for well-to-do Classes*—	
Main building	1,52,000
Hostel for 100 Hindu students	1,47,900
Hostel for 20 Muhammadan students	34,200
Dining halls and kitchens for Hindus and Muhammadans (Muhammadan estimate includes furniture), quarters for 50 servants, day latrines for students and servants, bathing platform, rough stabling for 100 ponies, quarters for 75 syces. House for Principal (on estimated salary of Rs. 1,500) and for one professor (on estimated salary of Rs. 1,000) ...	1,83,388
	5,17,488
(7) *Engineering College*—	
Main building	2,25,000
Hostel for 60 students	1,24,200
Hostel for six European students	30,000
Demonstration hall	30,200
Dining hall and kitchen for 100 students, quarters for 20 servants and two day latrines	36,460
	4,45,860
(8) *University Building*—	
Minor alterations in ground floor of Secretariat ...	2,000
(9) *Works Office*	9,800

	Rs.
(*10*) *Laboratories*—	
Chemistry	2,03,000
Physics	1,65,000
Zoology and Botany	1,11,272
Physiology	78,054
Anatomy, Materia Medica, etc.	68,800
	6,26,126
(*11*) *Natural History Museum*	58,800
(*12*) *Observatory*	8,000
(*13*) *Gasometer* (including Mansfield apparatus)	25,000
(*14*) *Additions to Hospital*—	
Small infection ward (3 rooms with 2 beds each and an attendant's room), 2 small cook houses, and quarters for 10 servants	15,624
(*15*) *Shops*—	
Acquisition, for the retail vendor and bookseller, of the shops marked 8 on the general plan	35,284
(*16*) *Gymnasium*	1,01,200
(*17*) *Union*	52,800
(*18*) *Houses for Officers*—	
Provincial Educational Service:	
Acquisition of 3 houses and a small house in the Amlapara	24,000
Erection of 27 houses on the approved double storey plan for Munsifs' houses in Eastern Bengal and Assam at Rs. 7,700 each	2,07,900
Subordinate Educational Service: Erection of 10 houses at Rs. 4,000 each	40,000
European subordinates: Erection of 2 houses at Rs. 9,000 each	18,000
	2,89,900
Total of Section I ...	32,35,666

SECTION II.

SANITARY FITTINGS.

Existing buildings	1,94,000
New buildings	50,000
Total of Section II ...	2,44,000

N. B.—The estimate for new buildings includes Rs. 5,600 on account of the College of Engineering and Rs. 5 account of the College for the well-to-do Classes.

SECTION III.

FURNITURE.

	Rs.
(1) The four Arts Colleges—	
Class rooms	7,638
Lecture theatre	9,129
Principals' rooms	1,200
Professors' „	900
Offices	2,400
Professors' common rooms	1,900
Students' „ „	4,900
Libraries	1,728
Hostels	27,500
Miscellaneous	5,000
	62,295
In round numbers ...	63,000
(2) University—	
Senate House	4,250
Curzon Hall	2,600
Library	13,000
Seminars	5,000
Islamic studies	3,000
Law	1,400
Physical education	1,100
Union	900
Professors' club	2,000
	33,250
(3) Minor items, as for instance clocks, typewriters and bicycle stands for (1) and (2)	10,000
(4) College for women—	
Class rooms	500
Professors' common rooms	400
Students' „ „	350
Professors' sitting rooms	400
Dining rooms	900
Professors' bed rooms	1,200
Dormitories	1,600
Laboratories	7,100
	12,450

	Rs.
(5) College for well-to-do Classes—	
Hall	300
Library	300
Students' common room	600
Professors' „ „	800
Class rooms	850
Office of Principal	300
Office of Bursar	200
General office	600
Professors' rooms	450
Hostels	7,200
	11,600
Total of Section III ...	1,30,300

N.B.—In the case of the Engineering College, Laboratories, etc., furniture is included in equipment.

SECTION IV.

EQUIPMENT.

(1) Hostels of the four Arts Colleges—	
Dining and kitchen utensils at Rs. 670 per 100 students	8,700
Miscellaneous	500
	9,200
(2) Libraries (books only, fittings are included under furniture)—	
University Library	52,000
University Library, science	23,000
Seminars	18,000
Islamic studies	12,000
Law	25,000
New and Muhammadan Colleges	40,000
Back numbers of periodicals	12,000
	1.82,000
(3) Seminar illustrative equipment	3,000

			Rs.
(4) Laboratories—			
Physics			55,000
Chemistry			65,000
Physiology, Zoology and Botany—		Rs.	
Furniture and fittings		30,000	
Apparatus—			
Physiology		30,000	
Botany		15,000	
Zoology		15,000	90,000
Anatomy			50,000
Materia Medica			5,000
Plumbing for all laboratories			80,000
			3,45,000
(5) Natural History Museum			40,000
(6) Observatory			5,000
(7) Women's College—			
Science			8,500
Library			6,000
Dining and kitchen utensils			300
Miscellaneous			200
			15,000
(8) College for well-to-do Classes—			
Library			10,000
Dining and kitchen utensils			1,200
Miscellaneous			500
			11,700
(9) College of Engineering (*see* Chapter XX)			1,50,000
(10) Hospital and Dispensaries			2,300
(11) Gymnasium			9,500
(12) Riding (Engineering students)			1,000
(13) Improvement of tanks and diving appliances			5,000
(14) Union			1,000
(15) Miscellaneous			10,000
Total of Section IV ...			7,89,700

SECTION V.

GROUNDS.

	Rs.
Realignment of roads	98,000
Laying out grounds	85,000
Altering tanks	20,000
Total of Section V ...	2,03,000

SECTION VI.

PLAYING FIELDS

Laying out fields	19,000
University pavilion	10,000
Five changing and store sheds	15,000
Fives courts	5,000
Total of Section VI ...	49,000

SECTION VII.

WATER, DRAINAGE AND ELECTRIC SUPPLY.

Water-supply and drainage (*see* Appendix V)	3,26,000
Scavenging	1,110
Electric supply (*see* Appendix VI)	3,12,000
Total of Section VII ...	6,39,110

TOTALS—SECTION I	32,35,666
„ II	2,44,000
„ III	1,30,300
„ IV	7,89,700
„ V	2,03,000
„ VI	49,000
„ VII	6,39,110
GRAND TOTAL ...	52,90,776

APPENDIX X.

Estimate of Recurring Charges.

SECTION I.

CENTRAL ADMINISTRATION, SUPERIOR STAFF.

	Per mensem.	Per annum.
	Rs.	Rs.
Vice-Chancellor, pay and sumptuary allowance ...	2,500	
Warden, Indian Educational Service ...	800	
Registrar, Provincial Educational Service ...	320	
Librarian, Provincial Educational Service ...	320	
3 Assistant Librarians, Subordinate Educational Service, at Rs. 150	450	
Professor of Physical Education, Indian Educational Service	800	
Superintendent, Gymnasium	300	
2 Assistant Superintendents at Rs. 100 ...	200	
2 Assistant Surgeons at Rs. 225	450	
1 Sub-Assistant Surgeon	52	
Groundman for playing-fields	300	
Subordinate ditto	100	
Assistant Engineer, Works office, on grade pay and an allowance of Rs. 50	650	
Clerk of the Works, Rs. 200 and an allowance of Rs. 30	230	
Total ...	7,472	89,664

SECTION II.

TEACHING STAFF.

	Per mensem.	Per annum.
	Rs.	Rs.
A. Arts and Science (*see* Chapter X)—		
4 Senior Professors at an average of Rs. 1,800 ...	7,200	
Professor of Physiology at Rs. 1,500	1,500	
20 Indian Educational Service officers	16,000	
A Reader of French and German on Rs. 500—800, average Rs. 650	650	
44 Provincial Educational Service officers ...	14,080	
29 Subordinate Educational Service officers (including 4 College Librarians and the Curator of the Natural History Museum)	4,350	
34 Junior Assistants at Rs. 100	3,400	
4 allowances for Principals at Rs. 200 ...	800	
Total ...	47,980	5,75,760

	Per mensem.	Per annum.
	Rs.	Rs.
B. College for women (*see* Chapter XVII)—		
2 Professors at Rs. 400—600 (Rs. 550) ...	1,100	
1 Professor at Rs. 250—500 (Rs. 425) ...	425	
2 Professors at Rs. 150—400 (Rs. 300) ...	600	
2 „ at Rs. 150—200 (Rs. 185) ...	370	
5 allowances at Rs. 100	500	
Total ...	2,995	35,940
C. College for the well-to-do Classes (*see* Chapter XVIII)—		
3 Indian Educational Service officers	2,400	
4 Provincial Educational Service officers ...	1,280	
2 Subordinate Educational Service officers ...	300	
Surveyor	100	
Riding Master	120	
Principal's allowance	200	
Total ...	4,400	52,800
D. Islamic Studies (*see* Chapter XIX)—		
Senior Professor	1,000	
2 Professors at Rs. 500	1,000	
5 Provincial Educational Service officers ...	1,600	
Total ...	3,600	43,200
E. Engineering (*see* Chapter XX)—		
Principal, Engineering College, at Rs. 1,500—2,000	1,850	
Senior Professor of Engineering at Rs. 1,000—1,500	1,350	
Second „ „ at Rs. 700 (average Public Works Department pay) and an allowance of Rs. 200	900	
2 Indian Educational Service officers ...	1,600	
4 Provincial Educational Service officers ...	1,280	
5 Subordinate Educational Service officers ...	750	
Allowances to Special Lecturers	...	2,000
Total ...	7,730	94,760
F. Medicine (*see* Chapter XXI)—		
Professor of Anatomy	600	
Senior Demonstrator at Rs. 200—300	270	
Junior „ at Rs. 100—200	170	
Allowance for giving instruction in Materia Medica	100	
Ditto ditto in Pharmacy ...	...	300
Total ...	1,140	13,980

	Per mensem. Rs.	Per annum. Rs.
G. Law (*see* Chapter XXII)—		
Senior Professor	850	
Second Professor	750	
Third Professor	600	
Five Tutors at Rs. 200	1,000	
Total ...	3,200	38,400
GRAND TOTAL, SECTION II ...	71,045	8,54,840

SECTION III.

CLERICAL ESTABLISHMENT (*see* CHAPTER XXVI).

Rs.	Per mensem. Rs.	Per annum. Rs.
1 at 150-200	183	
2 „ 100-150	266	
1 „ 75-100	92	
3 „ 100	300	
3 „ 80	240	
9 „ 60	540	
7 „ 45	315	
4 „ 40	160	
8 „ 35	280	
10 „ 25	250	
Total ...	2,626	31,512

SECTION IV.

MISCELLANEOUS SUBORDINATE ESTABLISHMENT.

		Per mensem. Rs.	Per annum. Rs.
For Chemistry ...	1 Mechanic	50	
	5 Compounders at Rs. 30 ...	150	
For Physics ...	1 Mechanic at Rs. 100—125	117	
	1 Assistant Mechanic at Rs. 40—50	47	
	1 Carpenter at Rs. 50—60 ...	57	
For Hospital and College Dispensaries—			
	3 Compounders at Rs. 20 ...	60	
	3 Ditto at Rs. 15 ...	45	
For Works office ...	1 Draftsman	50	
	Total ...	576	6,912

SECTION V.

MENIAL ESTABLISHMENT (*see* CHAPTER XXVI).

	Per mensem.	Per annum.
	Rs.	Rs.
19 Darwans at Rs. 15	285	
Vice-Chancellor's Jamadar at Rs. 15	15	
30 Chaprasies at Rs. 10	300	
10 Chaukidars at Rs. 10	100	
10 Daftries at Rs. 12	120	
38 Bearers (general) at Rs. 10	380	
Bearers (Science Department)—		
7 at Rs. 15	105	
10 at Rs. 12	120	
20 at Rs. 10	200	
6 Water goalas at Rs. 8	48	
50 Sweepers at Rs. 10	500	
12 Mehters at Rs. 10	120	
8 Doms (for laboratories) at Rs. 10	80	
22 Malies at Rs. 10	220	
12 Scavengers at Rs. 10	120	
Library—		
Head Attendant at Rs. 15	15	
7 Attendants at Rs. 12	84	
2 Daftries at Rs. 15	30	
Riding School: 12 Syces at Rs. 10	120	
Engineering College: Tindals for Demonstration Hall (lump provision)	200	
Hospital: lump provision	100	
Women's College: lump provision	150	
College for well-to-do Classes: lump provision ...	500	
Total ...	3,912	46,944

SECTION VI.

CONTINGENCIES.

	Per mensem.	Per annum.
	Rs.	Rs.
General University (including office) contingencies ...		15,000
Colleges: offices and common rooms—Dacca, Jagannath, New and Muhammadan Colleges, each Rs. 1,100 ...		4,400
Women's College		800
College for well-to-do Classes (*see* Chapter XVIII) ...		7,200
Engineering College (Sub-Committee's estimate)		20,000
College hostels: furniture and miscellaneous		5,000
Libraries and Seminars—		
University and College (*see* Chapter XI)		17,500
Law (*see* Chapter XXII)		1,000
Seminar equipment		500
Law and Islamic Studies		800

	Per mensem. Rs.	Per annum. Rs.
Laboratories—		
Chemistry		10,000
Physics		5,000
Botany		1,500
Zoology		3,000
Physiology		3,000
Anatomy		2,500
Materia Medica		300
Gas supply throughout		2,000
Natural History Museum		3,000
Examinations (*see* Chapter IX)		5,000
Scholarships and free studentships—		
Arts, Science and Islamic Studies (*see* Chapter XII)	4,000	48,000
Women's College (*see* Chapter XVII) ...	20	240
Medicine (*see* Chapter XXI)	120	1,440
Prizes (*see* Chapter XII)		500
Hospital and dispensaries		3,700
Physical Education—		
Gymnasium		500
Miscellaneous		300
Office		200
Riding		4,000
Playing-fields		2,000
Social—		
Grant-in-aid to Union		500
Grants for college entertainments		500
Works office		360
Water and drainage (*see* Appendix V)		15,200
Scavenging		1,404
Electric supply including street lighting (estimate furnished by Electrical Inspector to the Government of Bengal)		80,000
Travelling allowance		2,500
Total ...		2,68,844
TOTALS—SECTION I		89,664
„ II		8,54,840
„ III		31,512
„ IV		6,912
„ V		46,944
„ VI		2,68,844
GRAND TOTAL ...		12,98,716

APPENDIX XI.

List of Sub-Committees.

1. *English*—

Mr. H. R. James.
Mr. W. A. J. Archbold.
Babu Lalit Mohan Chatarji.
Mr. T. S. Sterling, M.A. (Cantab.), Professor, Presidency College, and University Lecturer in English, Calcutta.
Mr. Manmohan Ghosh, B.A. (Oxon.), Professor, Presidency College, Calcutta.

2. *History*—

Mr. W. A. J. Archbold.
Mr. Mohamed Ali.
Mr. W. Owston Smith, B.A. (Cantab.), F.R.H.S., Professor, Wesleyan College, Bankipur.
Mr. E. F. Oaten, M.A., LL.B. (Cantab.), Professor, Presidency College.
Babu Aswini Kumar Mukharji, M.A. (Calcutta), Professor, Dacca College.
Babu Jadu Nath Sarkar, M.A. (Calcutta), Professor, Patna College.

3. *Economics*—

Mr. W. C. Wordsworth, M.A. (Oxon. and London), Assistant Director of Public Instruction, Bengal.
Mr. T. T. Williams, B.A. (Cantab.), B.SC. (Cardiff), Professor, Dacca College; University Lecturer in Economics, Calcutta.
Mr. Manohar Lal, M.A. (Cantab.), Minto Professor of Economics, Calcutta University.
Mr. C. Russell, M.A. (Oxon.), Professor of Economics and Political Philosophy, Patna College.
Mr. J. C. Coyajee, B.A. (Cantab.), LL.B. (Bombay), Professor, Presidency College; University Lecturer in Economics, Calcutta.
Mr. K. L. Dutta, M.A. (Calcutta), Accountant-General; on deputation as President, Prices Enquiry Committee.
Mr. G. F. Shirras, M.A. (Aberdeen), F.E.S., F.S.S.; on deputation to the Government of India as a member of the Prices Enquiry Committee.
Mr. S. C. Williams, B.A. (Cambridge and London), Secretary to Agent and Manager, Provident Institution, East Indian Railway; University Lecturer in Economics, Calcutta.

4. *Philosophy—*

Mr. H. R. James.
Mr. Ramdas Khan, M.A., University Lecturer in Philosophy, Calcutta.
Dr. Hiralal Haldar, M.A., PH.D. (Calcutta), University Lecturer in Philosophy, Calcutta.
Dr. Aditya Nath Mukharji, M.A., PH.D. (Calcutta), Professor, Presidency College; University Lecturer in Philosophy, Calcutta.
Mr. C. Russell, M.A. (Oxon.), Professor, Patna College.

5. *Bengali—*

Mahamahopadhyaya Satis Chandra Acharji Vidyabhushan.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Babu Dinesh Chandra Sen, B.A. (Calcutta), University Reader in Bengali Literature, Calcutta.
Maulvi Kazi Imadul Huque, M.A. (Calcutta), Professor, Dacca Training College.
Rai Jatindra Nath Chaudhuri, M.A., B.L. (Calcutta).

6. *Sanskrit—*

The Hon'ble Justice Sir Ashutosh Mukharji, Saraswati, Shastrabachaspati, KT., C.S.I., M.A., D.L., D.SC., F.R.A.S., F.R.S.E., F.A.S.B., Vice-Chancellor of the Calcutta University.
Mahamahopadhyaya Satis Chandra Acharji Vidyabhushan.
Dr. A. Venis, C.I.E., M.A. (Oxon.), D. LITT. (Allahabad), F.A.S.B., Principal, Queen's College, Benares.
Mahamahopadhyaya Pandit Pramatha Nath Tarkabhushan, Professor, Sanskrit College; University Lecturer in Sanskrit, Calcutta.
Mahamahopadhyaya Pandit Prasanna Chandra Vidyaratna, Secretary, Eastern Bengal Saraswat Samaj.
Babu Bidhu Bhushan Goswami, M.A. (Calcutta), Professor, Dacca College.
Babu Kali Krishna Goswami, M.A., B.L. (Calcutta), Professor, Jagannath College, Dacca.

7. *Arabic and Persian—*

The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Mr. W. A. J. Archbold.
Shams-ul-Ulama Abu Nasr Muhammad Waheed.
Shams-ul-Ulama Kamaluddin Ahmad, M.A. (Calcutta), M.R.A.S. (London), Superintendent, Chittagong Madrasah.
Maulvi Muhammad Irfan, M.A. (Calcutta), Professor, Dacca College.
Maulvi Fida Ali Khan, M.A. (Calcutta), Professor, Chittagong College.
Maulvi Muhammad Musa, B.A. (Calcutta), Superintendent, Hooghly Madrasah.

8. *Mathematics—*

Mr. C. W. Peake.
Dr. Debendra Nath Mallik, B.A. (Cantab.), SC.D. (Dublin), F.R.S.E., Professor, Presidency College; University Reader in Physics and University Lecturer in Mathematics, Calcutta.
Dr. C. E. Cullis, M.A. (Cantab.), PH.D. (Jena), Professor, Presidency College University Reader, Calcutta.
Mr. J. M. Bottomley, B.A. (Oxon.), Professor, Dacca College.
Babu Kali Pada Basu, M.A. (Calcutta), Professor, Dacca College.

9. *Chemistry and Physics—*

Mr. G. W. Küchler.
Mr. C. W. Peake.
Dr. P. C. Ray, C.I.E., D.SC. (Edinburgh), PH.D. (Calcutta), F.A.S.B., Professor, Presidency College.
Dr. D. N. Mallik, B.A. (Cantab.), SC.D. (Dublin), F.R.S.E.
Mr. E. R. Watson, M.A. (Cantab.), B.SC. (London), Professor, Dacca College.
Dr. E. P. Harrison, PH.D. (Zürich), Professor, Presidency College.
Babu Chandra Bhusan Bhaduri, B.A. (Calcutta), Demonstrator in Chemistry, Presidency College.
Mr. D. B. Meek, M.A., B.SC. (Glasgow), Professor, Dacca College.
Mr. A. Macdonald, M.A., B.SC. (Glasgow), Professor, Dacca College.

10. *Biology—*

Mr. R. Nathan.
Mr. C. W. Peake.
Major A. T. Gage, M.A., B.SC., M.B., C.M. (Aberdeen), F.L.S., I.M.S., Superintendent, Royal Botanical Gardens, Calcutta, and Director of Botanical Survey in India.
Mr. S. W. Kemp, B.A. (Trinity College, Dublin), Officiating Superintendent, Zoological and Anthropological Section, Indian Museum, Calcutta.
Major D. McCay, M.D. (Royal University, Ireland), I.M.S., Professor of Physiology, Medical College, Calcutta.
Mr. G. P. Hector, M.A., B.SC. (Aberdeen), Economic Botanist, Government of Bengal.
Mr. S. C. Mahalanabis, B.SC. (Edinburgh), F.R.S.E., Professor, Presidency College; University Lecturer in Physiology, Calcutta.

11. *Medical Studies—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Mr. C. W. Peake.
Colonel G. F. A. Harris, C.S.I., M.D. (Durham), F.R.C.P. (London), I.M.S., Inspector-General of Civil Hospitals, Bengal.
Lieutenant-Colonel J. T. Calvert, M.B. (London), M.R.C.P. (London), D.P.H. (Cantab.), I.M.S., Principal, Medical College, Calcutta.
Major L. Rogers, C.I.E., F.R.C.P., F.R.C.S. (England), M.D. (London), I.M.S., Professor of Pathology, Medical College; Bacteriologist to Government.
Major D. McCay, M.D. (Royal University, Ireland), I.M.S., Professor of Physiology, Medical College, Calcutta.
Mr. S. C. Mahalanabis, B.SC. (Edinburgh), F.R.S.E., Professor, Presidency College; University Lecturer in Physiology.
Dr. Nilratan Sircar, M.A., M.D. (Calcutta).

12. *Engineering College—*

Mr. R. Nathan.
Mr. G. W. Küchler.
Mr. W. A. J. Archbold.
Mr. C. W. Peake.
Mr. H. H. Green, Officiating Secretary to the Government of Bengal, Public Works Department.

Mr. F. G. Royal Dawson, V.D., M.I.C.E., Senior Government Inspector of Railways, Circle II.
Rai Annada Prasad Sarkar Bahadur, B.C.E. (Calcutta), Superintending Engineer, Public Works Department, Bengal.
Mr. C. D. M. Hindley, M.A. (Cantab.), M.I.C.E., District Engineer, East Indian Railway, Gaya.
Mr. W. H. Everett, B.A., B.E. (Royal University, Ireland), M.I.MECH.E., M.I.E.E., Officiating Superintendent of Industries and Inspector of Technical Institutions in Bengal.
Mr. E. R. Watson, M.A. (Cantab.), B.SC. (London), Professor, Dacca College.
Mr. T. H. Richardson, M.A., B.A.I. (Dublin), M.INST.C.E., (Ireland), Professor of Civil Engineering, Sibpur.
Mr. C. J. Henderson, Head Master, Dacca School of Engineering.

13. *Law—*

Mr. R. Nathan.
Mr. G. W. Küchler.
Mr. Mohamed Ali.
The Hon'ble Mr. Justice Saiyid Hassan Imam (Barrister-at-Law), Puisne Judge of the High Court of Judicature at Fort William in Bengal.
Mr. Mohendra Nath Ray, M.A., B.L. (Calcutta), Vakil, High Court, Calcutta.
Dr. S. C. Bagchi, B.A., LL.B. (Cantab.), LL.D. (Dublin), Barrister-at-Law; Principal, University Law College, Calcutta.
Mr. Muazam Ali, B.A., LL.B. (Oxon.), Barrister-at-Law; Vice-Principal, Dacca Law College.

14. *Islamic Studies—*

Mr. R. Nathan.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Mr. W. A. J. Archbold.
Mr. Mohamed Ali.
Shams-ul-Ulama Abu Nasr Muhammad Waheed.
The Hon'ble Nawab Sir Khwaja Salimullah Bahadur, G.C.I.E., K.C.S.I.
Shams-ul-Ulama Maulvi Shibli Sahib Nomani of Lucknow.
Mulana Shah Sulaiman of Phulwari (Patna).
Shams-ul-Ulama Kamaluddin Ahmad, M.A. (Calcutta), M.R.A.S. (London), Superintendent, Chittagong Madrasah.
Maulvi Muhammad Irfan, M.A. (Calcutta), Professor, Dacca College.
Maulvi Muhammad Musa, B.A. (Calcutta), Superintendent, Hooghly Madrasah.
Maulvi Fida Ali Khan, M.A. (Calcutta), Professor, Chittagong College.

15. *Teaching—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Mr. W. E. Griffith, M.A. (Oxon.), Principal, David Hare Training College, Calcutta.
Mr. E. E. Biss, Principal, Dacca Training College.
Rev. Mr. W. G. Brockway, B.A. (London), London Missionary Societies' Institution, Calcutta.

Khan Bahadur Ahsanullah, M.A. (Calcutta), M.R.A.S. (London), Officiating Inspector of Schools, Chittagong Division.
Rai Rasamay Mitra Bahadur, M.A. (Calcutta), Head Master, Hindu School, Calcutta.

16. *Library—*

Mr. R. Nathan.
Mr. H. R. James.
Mr. W. A. J. Archbold.
Mr. C. W. Peake.
Babu Lalit Mohan Chatarji.
Dr. M. Musharraf-ul Hukk, PH.D. (Halle), Professor, Dacca College.

17. *Examinations—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Mr. H. R. James.
Babu Lalit Mohan Chatarji.

18. *Scholarships—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Babu Ananda Chandra Ray.
Mr. Mohamed Ali.
Babu Lalit Mohan Chatarji.

19. *Muhammadan College—*

Mr. R. Nathan.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Nawab Siraj-ul-Islam.
Mr. W. A. J. Archbold.
Mr. Mohamed Ali.
Shams-ul-Ulama Abu Nasr Muhammad Waheed.
The Hon'ble Nawab Sir Khwaja Salimullah Bahadur, G.C.I.E., K.C.S.I.
The Hon'ble Mr. A. K. Abu Ahmed Ghaznavi, Additional Member of the Governor-General's Council.
Maulvi Naziruddin Ahmad, M.A. (Calcutta), Deputy Magistrate and Collector, Dacca.

20. *Women's College—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Miss K. Platt, M.B., B.S. (London), Superintendent, Lady Dufferin Victoria Hospital, Calcutta.
Miss L. Sorabji, Lady Principal of the Eden High School for Girls, Dacca.
Miss E. H. Crawford, Officiating Inspectress of Schools, Presidency Circle.

Miss E. Chamier, Officiating Inspectress of Schools, Dacca Circle.
Mr. P. K. Bose, B.L. (Calcutta), Bar.-at-Law, Dacca.

21. *Staff—*

Mr. R. Nathan.
Mr. G. W. Küchler.
Mr. W. A. J. Archbold.
Babu Lalit Mohan Chatarji.
Mr. E. R. Watson, M.A. (Cantab.), B.SC. (London), Professor, Dacca College.
Mr. B. N. Das, M.A. (Calcutta), B.SC. (London), Professor, Dacca College.

22. *Students' Affairs—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Mr. Mohamed Ali.
Babu Lalit Mohan Chatarji.
Mr. C. P. Walsh, Superintending Engineer, Dacca.
Major H. Chamney, C.M.G., Principal, Police Training School, Dacca.
Babu Dhirendra Nath Ghose, B.A., Student, Law College, Dacca.
Babu Jitendra Nath Mukharji, 3rd year Student, Jagannath College, Dacca.

23. *Buildings and Sites—*

Mr. R. Nathan.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri.
Babu Ananda Chandra Ray.
Mr. W. A. J. Archbold.
Mr. C. W. Peake.
Babu Lalit Mohan Chatarji.
Shams-ul-Ulama Abu Nasr Muhammad Waheed.
Mr. C. P. Walsh, Superintending Engineer, Dacca Circle.
Mr. H. A. Crouch, F R.I.B.A., Consulting Architect, Bengal.
Mr. E. R. Watson, M.A. (Cantab.), B.SC. (London), Professor, Dacca College.

24. *Furniture—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Babu Lalit Mohan Chatarji.
Mr. F. C. Turner, M.A. (Oxon.), Principal, Chittagong College.
Mr. E. R. Watson, M.A., B.SC., Professor, Dacca College.
Mr. C. J. Henderson, Head Master, School of Engineering, Dacca.

25. *Finance, Office Arrangements, Subordinate Staff—*

Mr. R. Nathan.
Mr. W. A. J. Archbold.
Mr. C. W. Peake.
Babu Lalit Mohan Chatarji.
Mr. C. B. Sen, B.A. (Calcutta), Chief Superintendent, Outside Audit Department, Office of the Comptroller and Auditor-General of India.

APPENDIX XII.

List of Persons who advised the Committee.

THE following gentlemen very kindly gave their help and advice to the Committee :—

Mr. H. A. Crouch, F.R.I.B.A., Consulting Architect to the Government of Bengal, and

Mr. C. P. Walsh, Superintending Engineer, Dacca, and his Assistant Engineer, Mr. H. Terrell,

upon sites and buildings.

Mr. R. L. Proudlock, Arboricultural Expert to the Government of Bengal, upon the laying out of the grounds of the University.

Major W. W. Clemesha, M.D., D.P.H., I.M.S., Sanitary Commissioner, Bengal,

Mr. G. B. Williams, Sanitary Engineer, Bengal, and

Mr. W. Dixon Swinney, Plumbing Expert to the Government of Bengal, on sanitary arrangements and water-supply.

Mr. R. J. Browne, Electrical Inspector, Bengal, and

Mr. A. N. McIntyre, Junior Electrical Inspector, Bengal,

upon the electric supply.

Sir Gurudas Banerji, KT., M.A., D.L. (Calcutta),

The Hon'ble Mr. Justice Saiyid Hassan Imam, Barrister-at-Law,

Mr. Mohendra Nath Ray, M.A., B.L. (Calcutta), Vakil, High Court, Calcutta,

Dr. S. C. Bagchi, B.A., LL.B. (Cantab.), LL.D. (Dublin), Barrister-at-Law, Principal, University Law College, Calcutta, and

Mr. Muazam Ali, B.A., LL.B. (Oxon.), Barrister-at-Law, Vice-Principal, Dacca Law College,

upon a scheme for legal studies.

Syed Hossain Bilgrami, Nawab Imad-ul-mulk Bahadur, C.S.I., C.I.E., B.A., Barrister-at-Law, Hyderabad, Deccan, and

Dr. J. Horovitz, PH.D. (Berlin), Professor of Arabic, Muhammadan Anglo-Oriental College, Aligarh,

upon Islamic studies.

Captain C. L. Peart, I.A., Secretary, Board of Examiners, Fort William,
upon the Persian course.

Dr. J. H. Gray, M.D. (Columbia University, U. S. A.), Physical Director of Young Men's Christian Association, Calcutta; Advisor to the Government of Bengal on questions connected with physical education,
upon a scheme for physical education.

Mr. F. C. Turner, M.A. (Oxon.), Principal, Chittagong College: at the time Officiating Principal, Dacca College,
on many subjects connected with the work of the Committee during its stay in Dacca.

Mrs. P. K. Bose,
upon the scheme for a College for Women.

APPENDIX XIII.

Opinions on the Subject of a College for the Well-to-do Classes.

THE outline of a scheme for the incorporation of a College for the Well-to-do Classes was circulated widely under the signatures of the following gentlemen, landholders and prominent residents of Dacca and other places in Eastern Bengal:—

The Hon'ble Nawab Sir Khwaja Salimullah Bahadur, G.C.I.E., K.C.S.I., of Dacca.
Raja Srinath Ray of Bhagyakul, Dacca.
The Hon'ble Mr. A. K. Abu Ahmed Ghaznavi, Additional Member of the Council of the Governor-General, of Dilduar, Mymensingh.
Rai Chandra Kumar Datta Bahadur of Dacca.
Rai Iswar Chandra Ghose Bahadur of Dacca.
Maulvi Wazed Ali Khan Panee of Karatia, Mymensingh.
The Hon'ble Maulvi Muhammad Ismail Chaudhuri of Charamaddy, Bakarganj.
Babu Hem Chandra Rai Chaudhuri of Dhankora, Dacca.
Babu Rajendra Kumar Bose of Srinagar, Dacca.
Babu Ramani Mohan Ray of Rowaid, Dacca.
Babu Narendra Narayan Rai Chaudhuri of Baldha, Dacca.
Babu Jadu Nath Baisak of Dacca.
Babu Rajendra Lal Sarma of Dacca.
Babu Ananda Chandra Ray of Dacca.

2. The following is a list of gentlemen who have expressed themselves in general sympathy with the scheme:—

The Hon'ble Maharaja Manindra Chandra Nandi of Kasimbazar, Murshidabad.
Maharaja Ranjit Sinha of Nashipur, Murshidabad.
Nawab A. F. M. Abdur Rahman, Khan Bahadur, of Calcutta.
Nawab Saiyid Hossein Haidar Chaudhuri, Khan Bahadur, of Comilla.
The Hon'ble Raja Mahendra Ranjan Ray Chaudhuri of Kakina, Rangpur.
Raja Manmatha Nath Ray Chaudhuri of Santosh, Mymensingh.
Raja Jagat Kishore Acharji Chaudhuri of Muktagacha, Mymensingh.
Raja Gopal Lal Ray of Tajhat, Rangpur.
Maharajkumar Sashi Kanta Acharji Chaudhuri of Mymensingh.
Rai Sarat Chandra Das Bahadur, C.I.E., of Calcutta.
Khan Bahadur Muhammad Ali Nawab of Paschimgaon, Tippera.
Rai Satish Chandra Chaudhuri Bahadur of Mymensingh.
Rai Rajkumar Datta Bahadur of Chamrakola, Noakhali.

Rai Radha Charan Pal Bahadur of Calcutta.
Rai Radhaballabh Chaudhuri Bahadur of Sherpur, Mymensingh.
Rai Charu Chandra Chaudhuri Bahadur of Sherpur, Mymensingh.
The Hon'ble Mr. Saradindu Narayan Ray of Dinajpur.
The Hon'ble Babu Prasanna Kumar Ray of Chittagong.
Sahebzada Saiyid Muhammad Hussein of Shaistabad, Bakarganj.
Babu Devendra Nath Sarkar of Burdwan.
Saiyid Ahammad of Calcutta.
Maulvi Muhammad Yasin of Burdwan.
Babu Tarit Bhusan Ray of Bhagyakul, Dacca.
Maulvi Abdul Jabbar of Burdwan.
Maulvi Ali Ahmad of Comilla.
Maulvi Muhammad Ahid of Sylhet.
Maulvi Syed Ahmed Hossain of Dilduar, Mymensingh.
Babu Harihar Chakravarti of Mymensingh.
Maulvi Muhammad Ali of Sylhet.
Hakim Muhammad Sikunder Ali of Paschimgaon, Tippera.
Babu Jatra Mohan Sen of Chittagong.
Babu Amar Krishna Sen of Chittagong.
Maulvi Amir Ali of Chittagong.
Babu S. C. Ray of Comilla.
Chaudhuri Musharaff Hossain Khan of Bakarganj.
Babu Deva Kumar Ray Chaudhuri of Lakutia, Bakarganj.
Babu Nalini Mohan Ray Chaudhuri of Bakarganj.
Babu Jogesh Chandra Sen Ray Chaudhuri of Bakarganj.
Babu Rai Charan Guha of Bakarganj.
Babu Rajendra Nath Chakravarti of Bakarganj.
Babu Akil Chandra Datta Chaudhuri of Bakarganj.
Babu Kali Prasanna Guha of Bakarganj.
Babu Hem Chandra Chaudhuri of Ambaria, Mymensingh.
Babu Anath Bandhu Guha of Mymensingh.
Babu Upendra Chandra Chaudhuri of Mymensingh.
Babu Sreenath Acharji Chaudhuri of Mymensingh.
Babu Barada Kishore Acharji Chaudhuri of Mymensingh.
Babu Jnanendra Mohan Chaudhuri of Mymensingh.
Babu Satindra Kumar Chaudhuri of Mymensingh.

3. The following gentlemen were present at the Conference held in the house of the Nawab Bahadur of Murshidabad at Calcutta on the 25th September 1912:—

The Nawab Bahadur of Murshidabad, Amir-ul-Omrah, K.C.S.I., K.C.V.O., President of the Conference.

The Hon'ble Sir Bijay Chand Mahtab, K.C.S.I., K.C.I.E., I.O.M., Maharajadhiraja Bahadur of Burdwan.

The Hon'ble Nawab Sir Khwaja Salimullah Bahadur, G.C.I.E., K.C.S.I., of Dacca.

The Hon'ble Maharaja Sir Prodyot Kumar Tagore Bahadur, KT., of Calcutta.
Raja Shashi Shekhareswar Ray Bahadur of Tahirpur, Rajshahi.
Raja Pyari Mohan Mukharji, C.I.E., of Uttarpara, Hooghly.
The Hon'ble Raja Kishari Lal Goswami of Serampur, Hooghly.
Nawab Siraj-ul-Islam, Khan Bahadur, of Calcutta.
The Hon'ble Nawab Saiyid Nawab Ali Chaudhuri, Khan Bahadur, of Dhanbari, Mymensingh.
Raja Gopal Lal Ray of Tajhat, Rangpur.
Sir Chandra Madhab Ghose of Calcutta.
The Hon'ble Rai Sita Nath Ray Bahadur of Bhagyakul, Dacca.
The Hon'ble Mr. G. H. C. Ariff.
The Hon'ble Gholam Hossain Kasimali.
Nawabzada Saiyid Ashrafuddin Ahmed, Khan Bahadur, of Hooghly.
Khan Bahadur Khundkhar Fazl-i-Rabbi of Murshidabad.
Khan Bahadur Badr-ud-din Haidar of Calcutta.
Rai Jogendra Chandra Ghose Bahadur of Calcutta.
Sahebzada Mahomed Sultan Alam.
Babu Janaki Nath Ray of Bhagyakul.
Maulvi Wazid Ali Khan Panee of Karatiya, Mymensingh
Mr. A. H. Abu Ahmad Ghaznavi of Mymensingh.
Babu Murari Dhar Ray.
Haji Noor Mahomed Zacharia.
Babu Satish Chandra Ray of Comilla
Maulvi M. Ahmed.
Babu Haladhar Ray.
Babu Jasada Lal Ray.
Babu Nanda Lal Ray.
Mr. S. M. Hossein.
Mr. S. Mahboob Ali.
Saiyid Fateh Ali Mirza.
Mr. N. Ahmed.
Mr. Zil-ur-Rahman.
Babu Ananda Chandra Ray.

After a long and interesting discussion the following resolution was put to the meeting and carried:—

> "That this Conference is unanimously of opinion that the establishment of an institution of the nature described and discussed in the circular letter over the signatures of Nawab Sir Salimullah Bahadur and twelve other zamindars of Eastern Bengal appears to be desirable as an appanage of the proposed Dacca University: it is understood that the proposed institution is one primarily intended for the benefit of the Dacca and Chittagong Divisions."

4. Maharaja Kumud Chandra Singh of Susang and Raja Jogendra Kishor Ray Chaudhuri of Ramgopalpur do not favour the scheme, and the Hon'ble Maharaja Girija Nath Ray Bahadur of Dinajpur doubts whether it can be successfully carried out at Dacca.

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DACCA UNIVERSITY

PLAN SHEWING REARRANGEMENT OF ROADS.

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Proposed new roads	— Red
Existing roads to be retained	— Brown
Existing roads to be dismantled	— Yellow

Reg No 4475 E., 12.—11.—600.+1554

A General Plan of The Proposed Dacca University

Scale in feet 100 0 100 1000 1500

REFERENCES

I Eden College and High School for Girls (a) College (b) School (c) House of Lady Principal.
II Power House of Electric Supply Company
III Tower of University Waterworks
IV Dacca College (a) Main College Building (b)(c)(d)(e)(f) first, Second third and Fourth Hostels.
V Historical Museum (a) Gate House (b) Baradari House.
VI Drill Ground
VII Gymnasium
VIII Booksellers and Provision dealer's shops
IX Union
X Professors' Club
XI University Buildings and New College
XII University Laboratories (a)(b)(c)(d)
XIII Jagonnath College (a) Main Building (b) Second hostel (c) Principals House (d) Professor's Houses.
XIV Hospital
XV Anatomical Laboratory
XVI College and School of Engineering (a) College (b) College hostel (c) College Hostel for European Students (d) School (e) School Hostel (f) workshops (g) Demonstration Hall and Power House.
XVII Works Office
XVIII Muhammadan College (a) Main building (b) Future extensions.
XIX Natural History Museum
XX Astronomical Observatory
XXI Senate House (a) Senate House (b) Residence of Vice Chancellor
XXII College for Upper Class (a) College (b) Muhammadan Hostel (c) Hindu Hostels (d) Stables (e) Servants quarters (f) Riding School
XXIII Fifth Hostel Dacca College.

E. Houses for Officers of the I.E.S.; X Site for additional do. I Houses for Officers of the P.E.S. and S.E.S.; E.S. Houses for European subordinates.
T Temples, Tombs or Masjids; C Houses for Clerks

INDUSTRIAL INSTITUTE
SHAH BAGH
THE RAMNA
Nilkhet Road
Eelkhana Road
Bakshi Bazar Road
THE UNIVERSITY PLAYING FIELDS
E.B.S. RAILWAY
CONSERVANCY TRAMWAY
RAILWAY WORK SHOPS
RAILWAY YARD
RAILWAY STATION
TANK

Henry A. Crouch F.R.I.B.A.
Consulting Architect to the Government of Bengal 1912.

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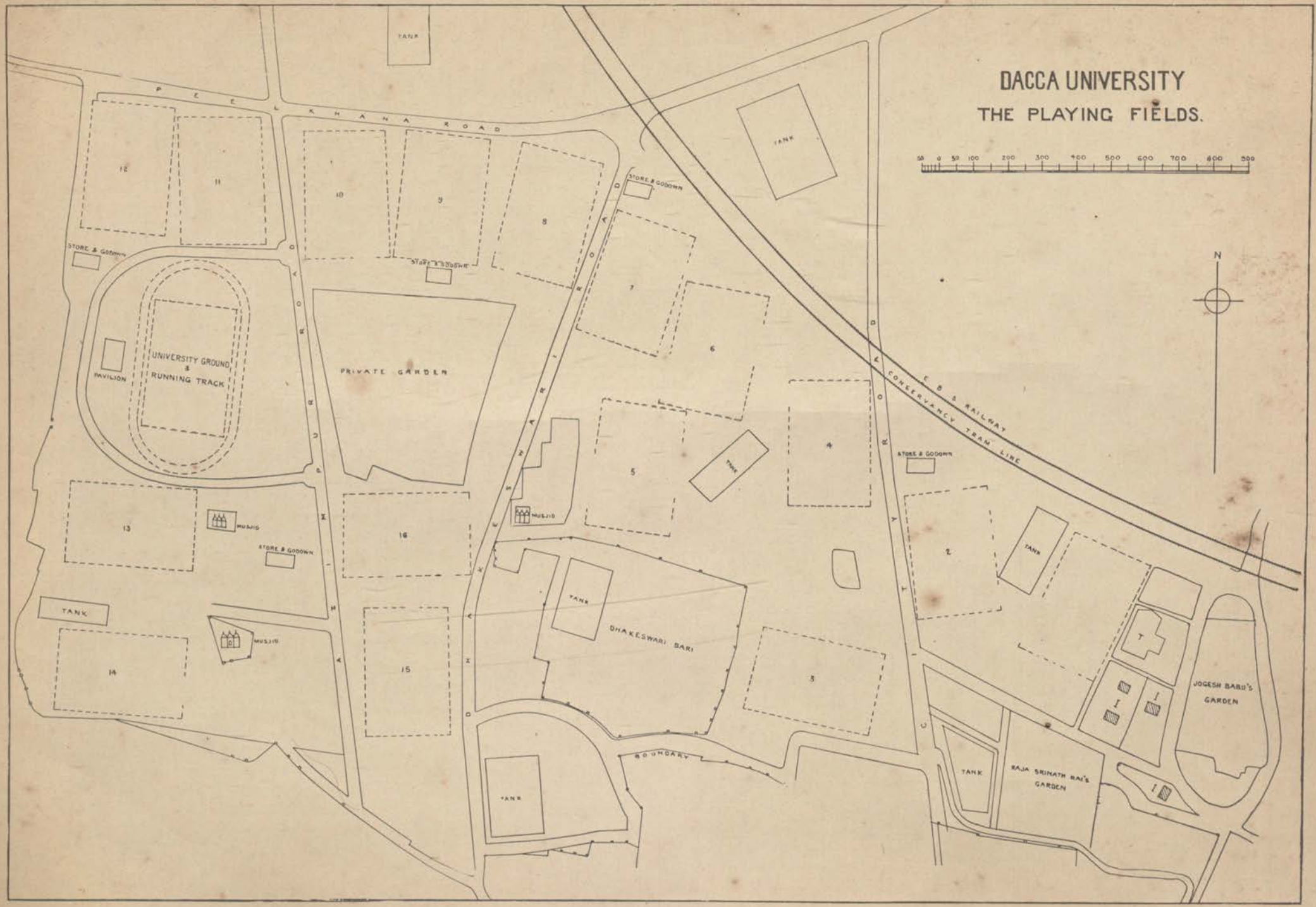
DACCA UNIVERSITY
THE PLAYING FIELDS.
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N
PEELKHANA ROAD
DACCA ROAD
DACCA CANTONMENT ROAD
DACCA NARAYANGANJ ROAD
E B S RAILWAY
CONSERVANCY TRAM LINE
TANK
STORE & GODOWN
UNIVERSITY GROUND & RUNNING TRACK
PAVILION
PRIVATE GARDEN
MUSJID
DHAKESWARI BARI
BOUNDARY
RAJA SRINATH RAI'S GARDEN
JOGESH BABU'S GARDEN
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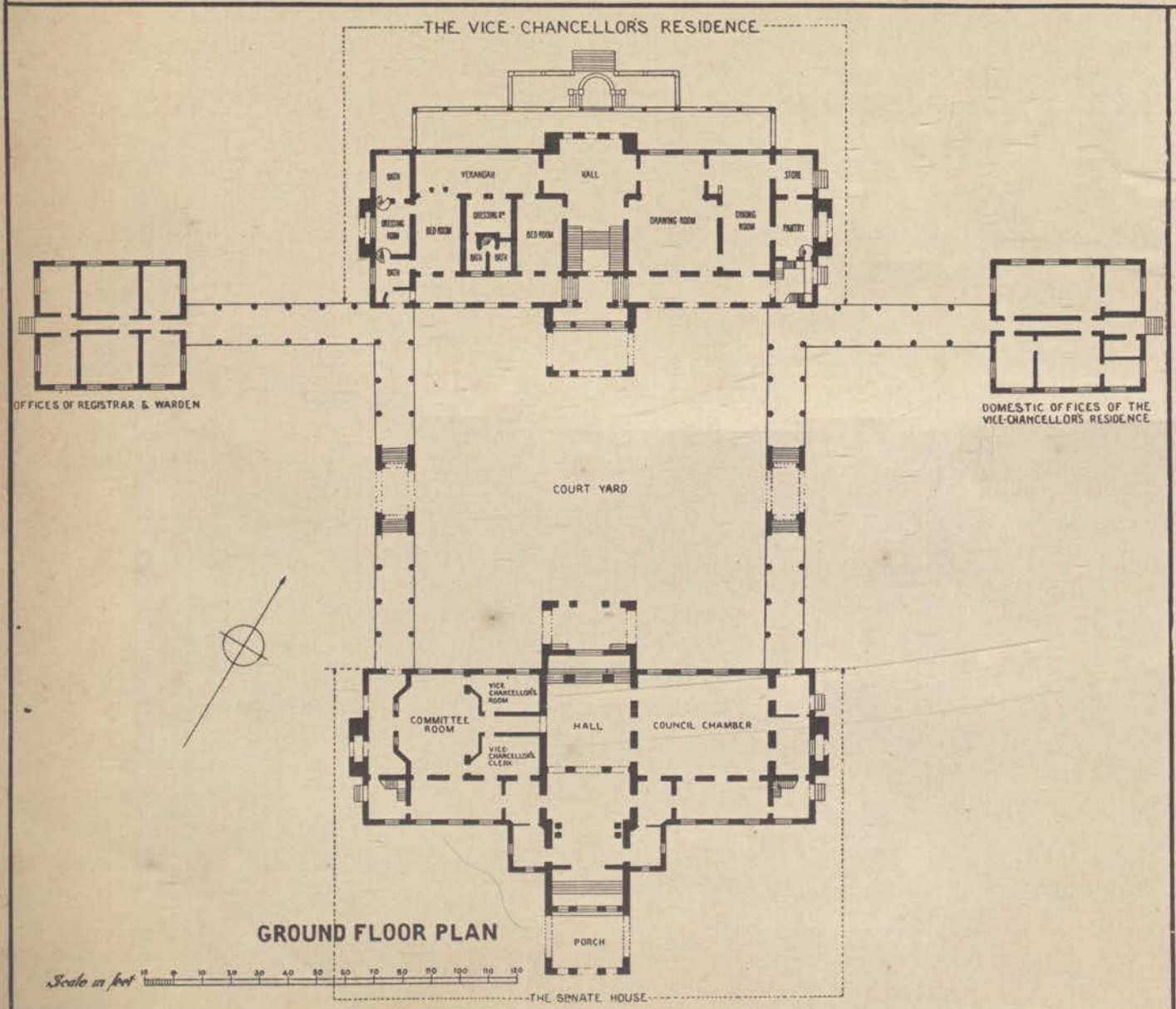
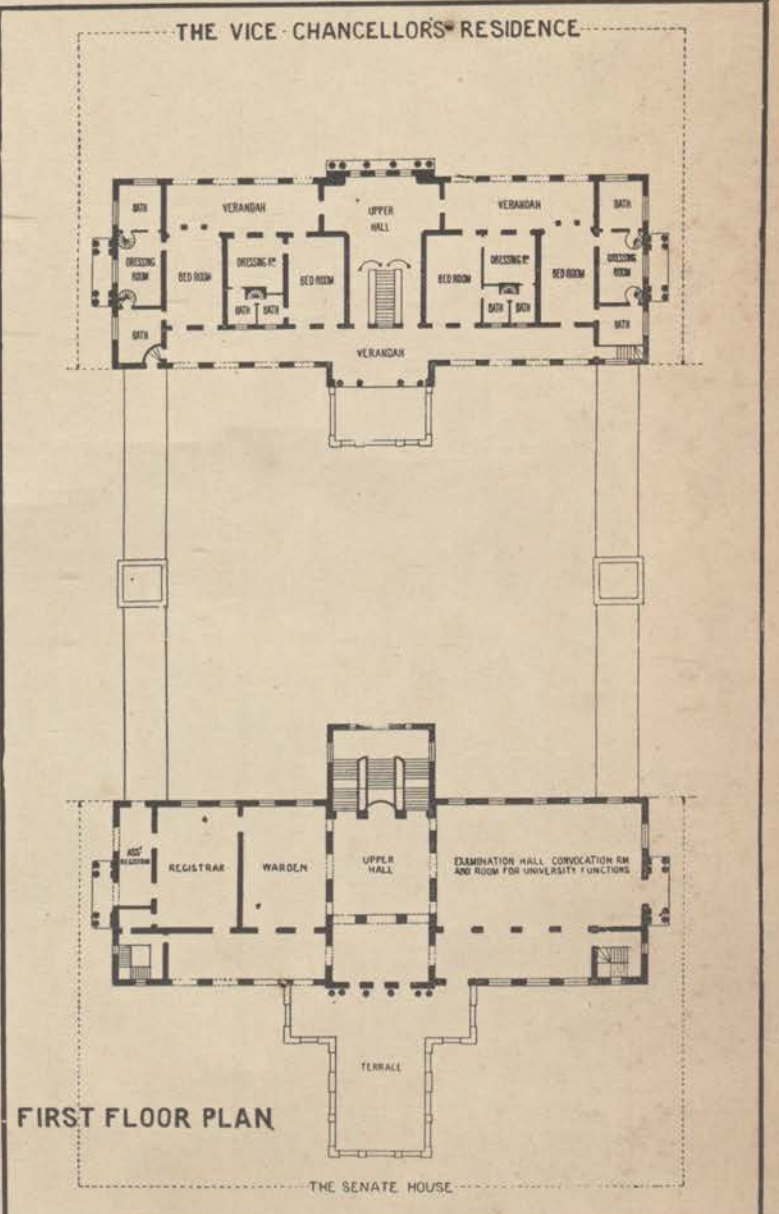
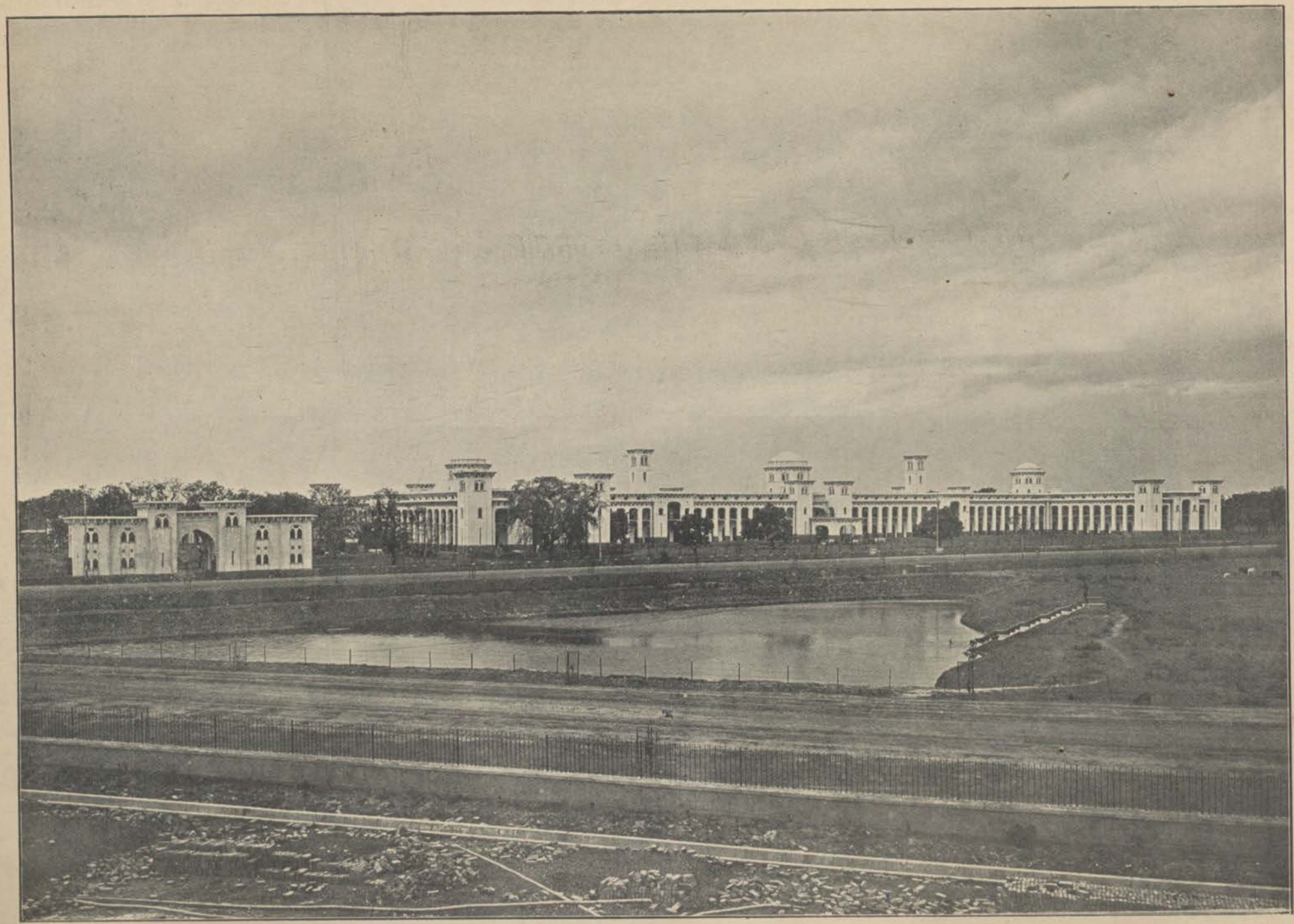
Senate House and Vice-Chancellor's Residence.

THE SENATE HOUSE AND THE VICE-CHANCELLOR'S RESIDENCE.

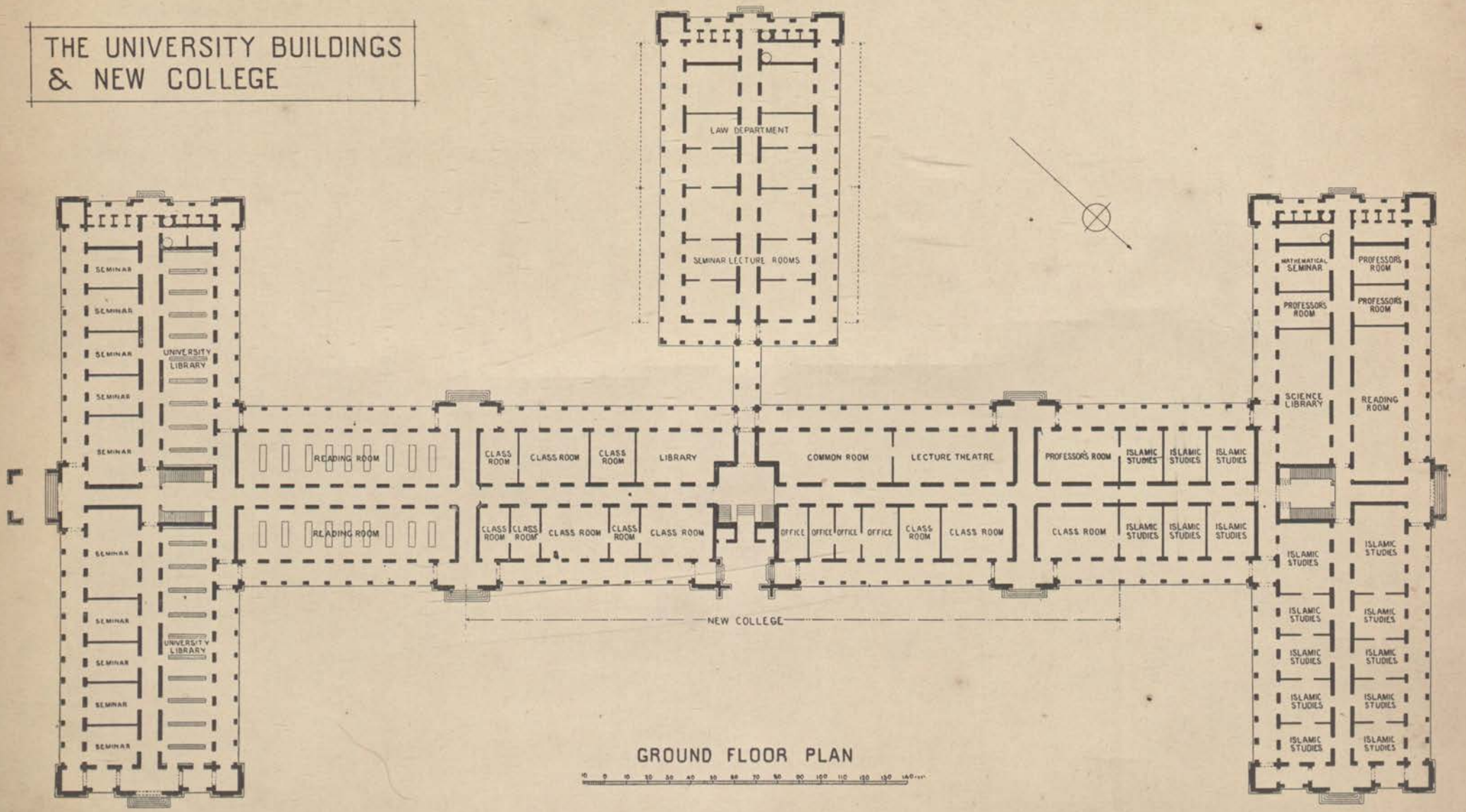






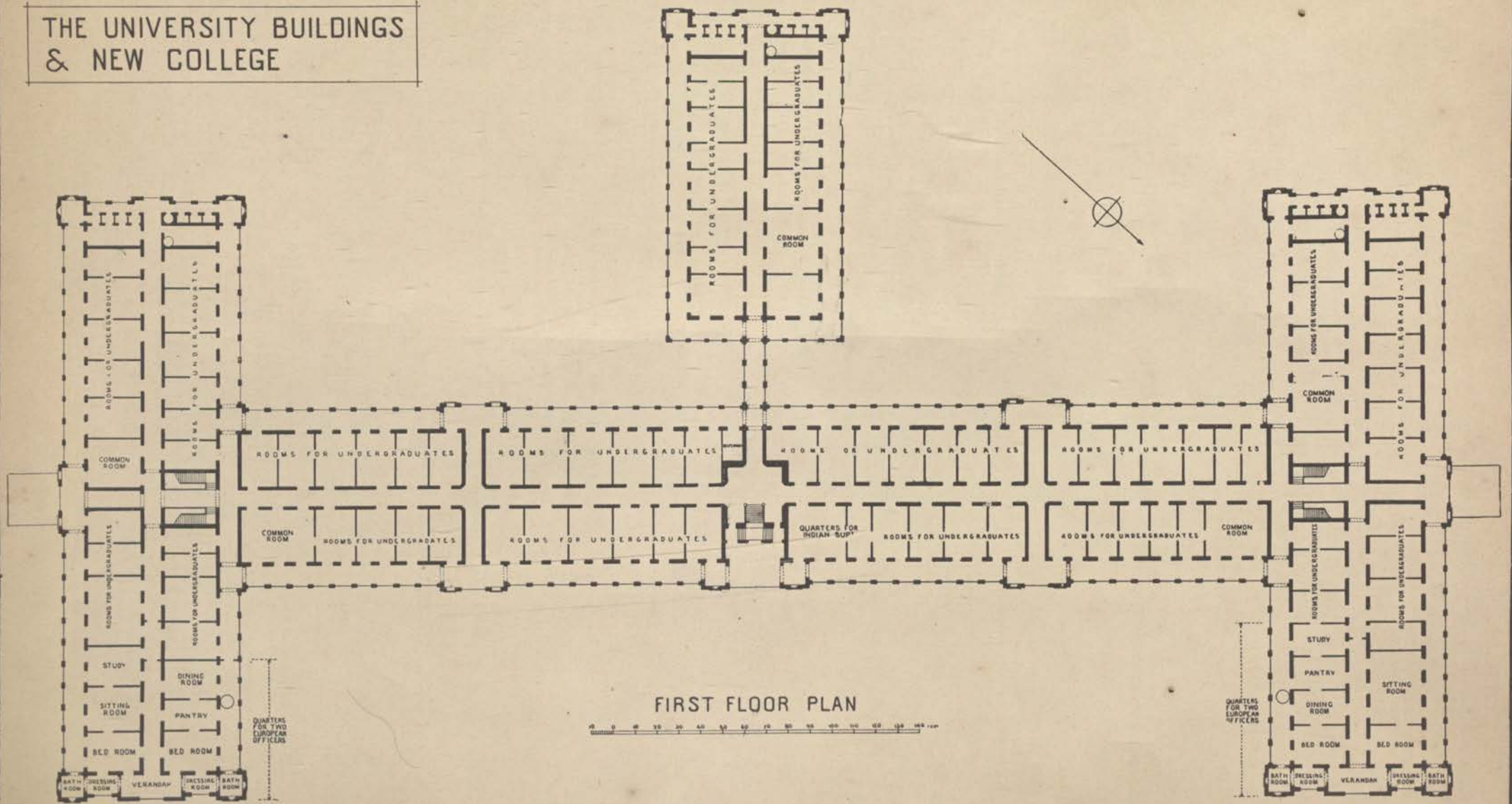
University Buildings and New College.

THE UNIVERSITY BUILDINGS & NEW COLLEGE



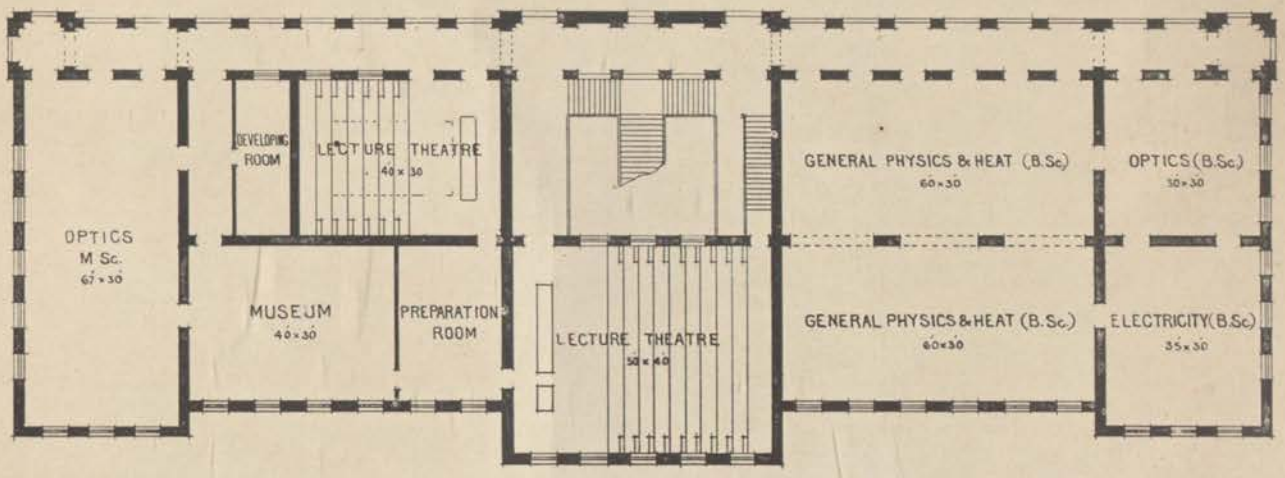
GROUND FLOOR PLAN

THE UNIVERSITY BUILDINGS & NEW COLLEGE



FIRST FLOOR PLAN

UNIVERSITY PHYSICS LABORATORY



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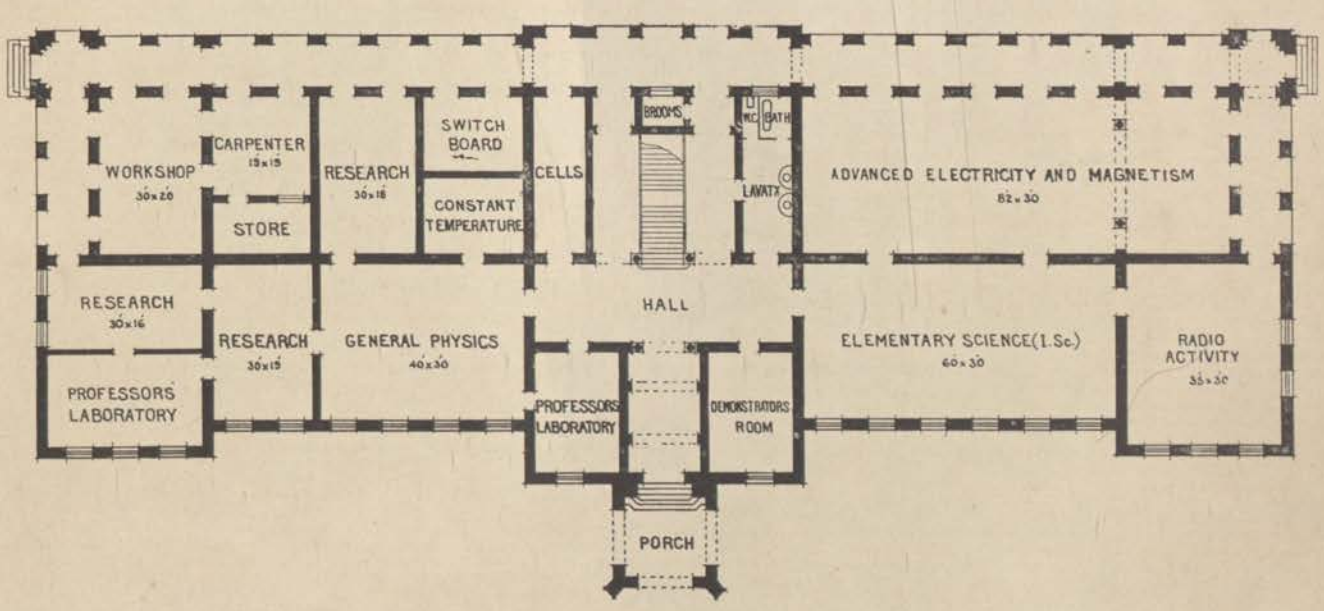

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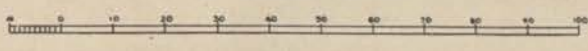
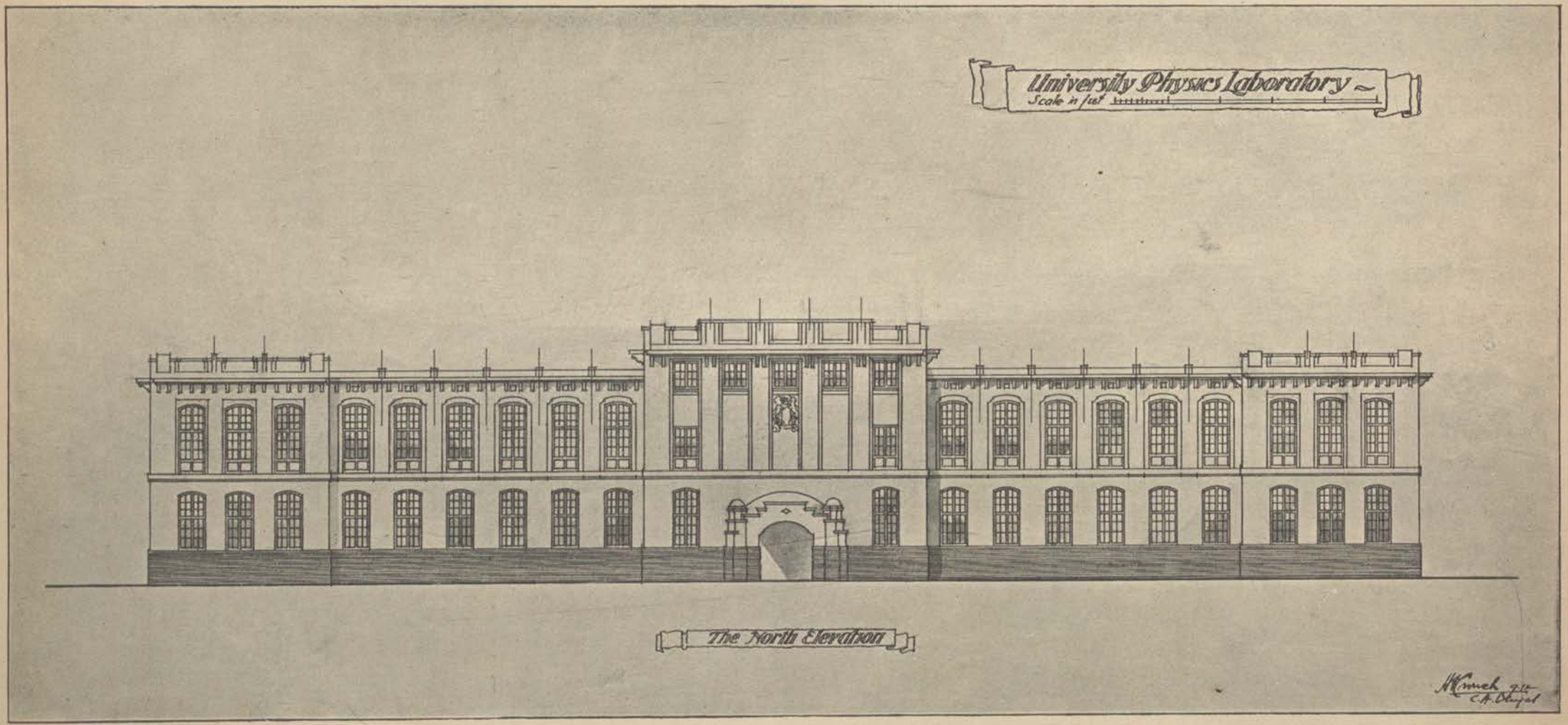
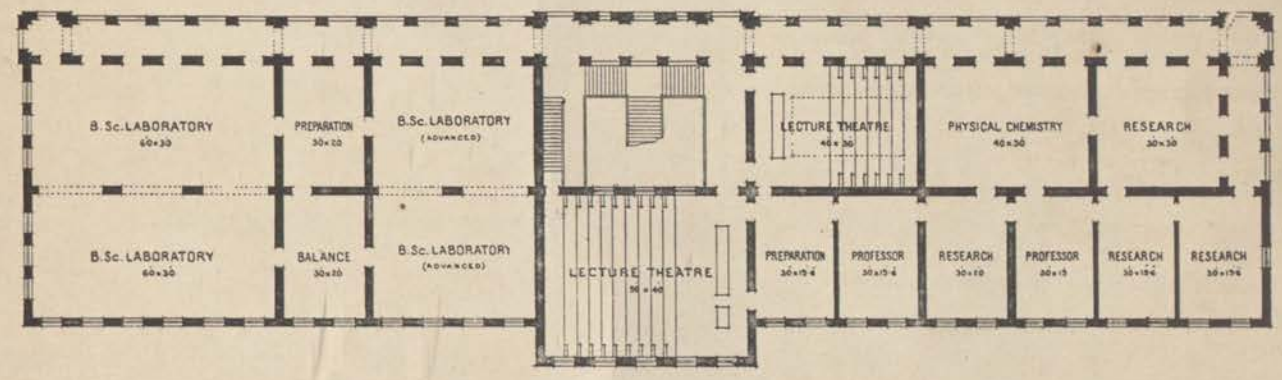


Henry A. Crouch M.I.A.T.
Consulting Architect for Govt Buildings
10/12



Physical Laboratory, Elevation.

UNIVERSITY CHEMISTRY LABORATORY



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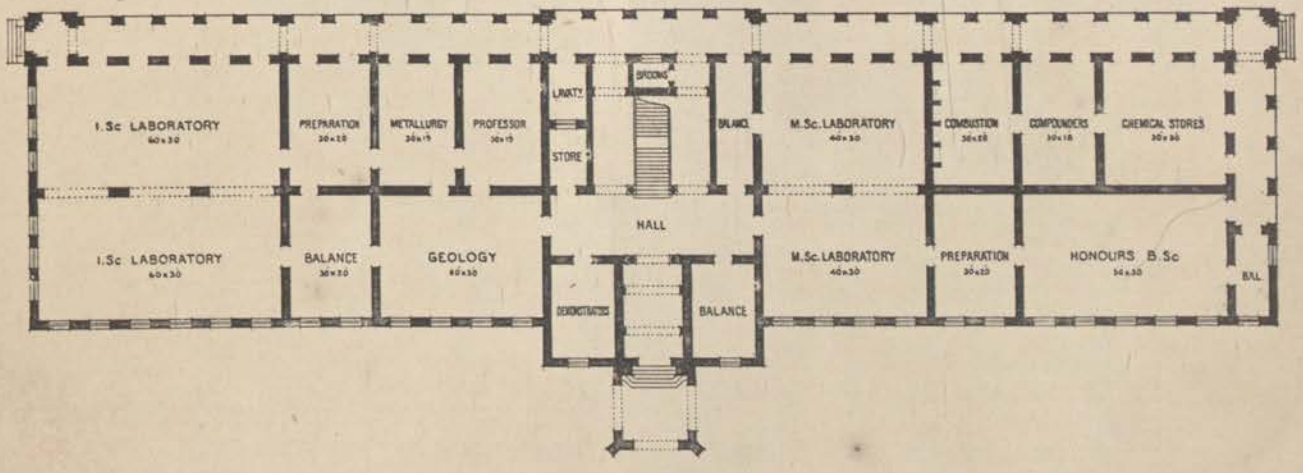
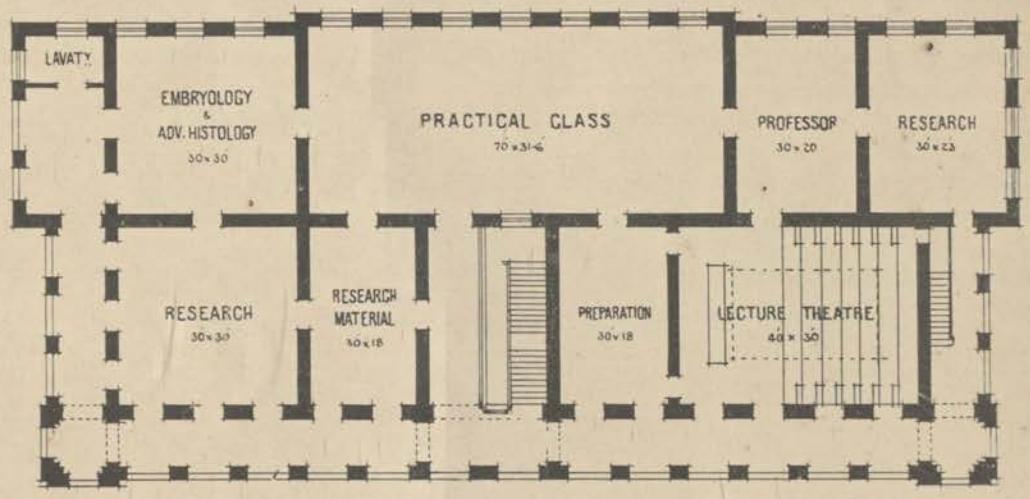


GROUND FLOOR

THE UNIVERSITY BOTANY AND ZOOLOGY LABORATORIES



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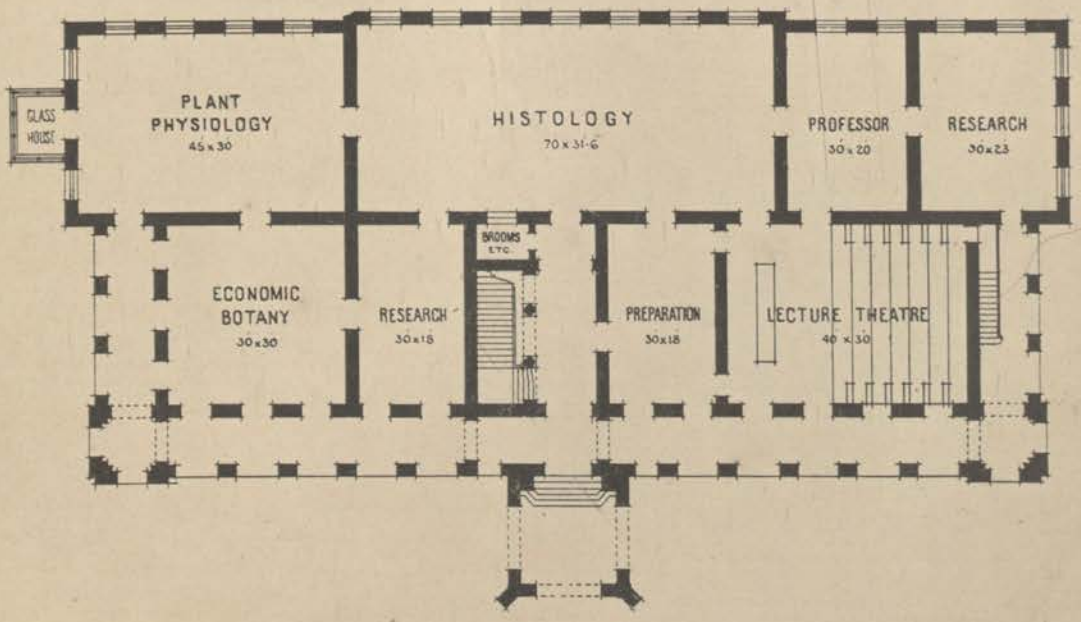

GROUND FLOOR *(Botany)*

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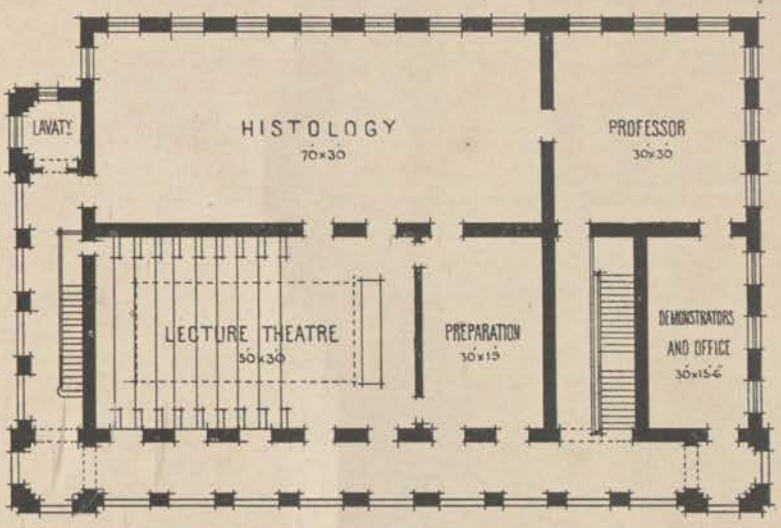
THE UNIVERSITY PHYSIOLOGY LABORATORY



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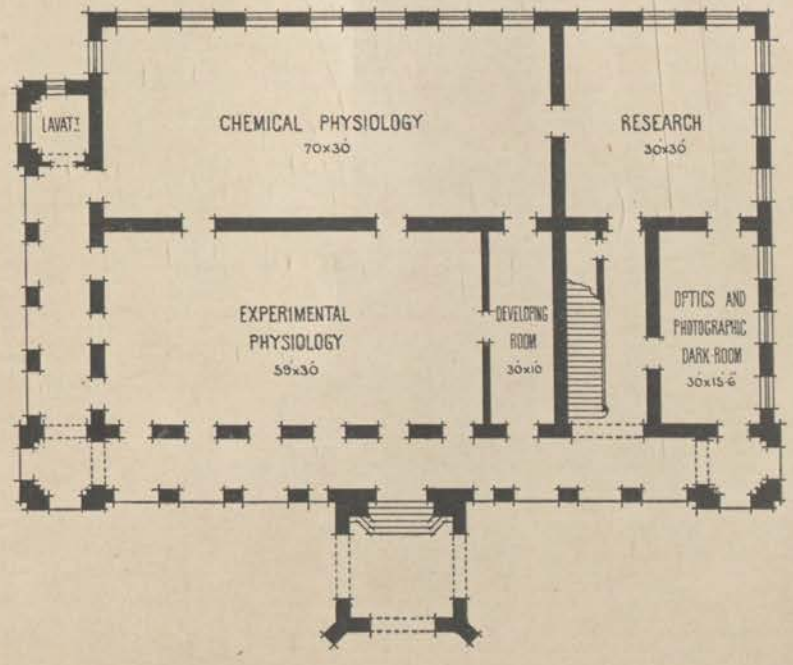

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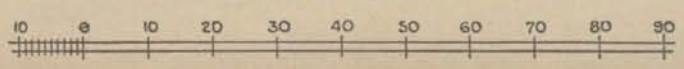
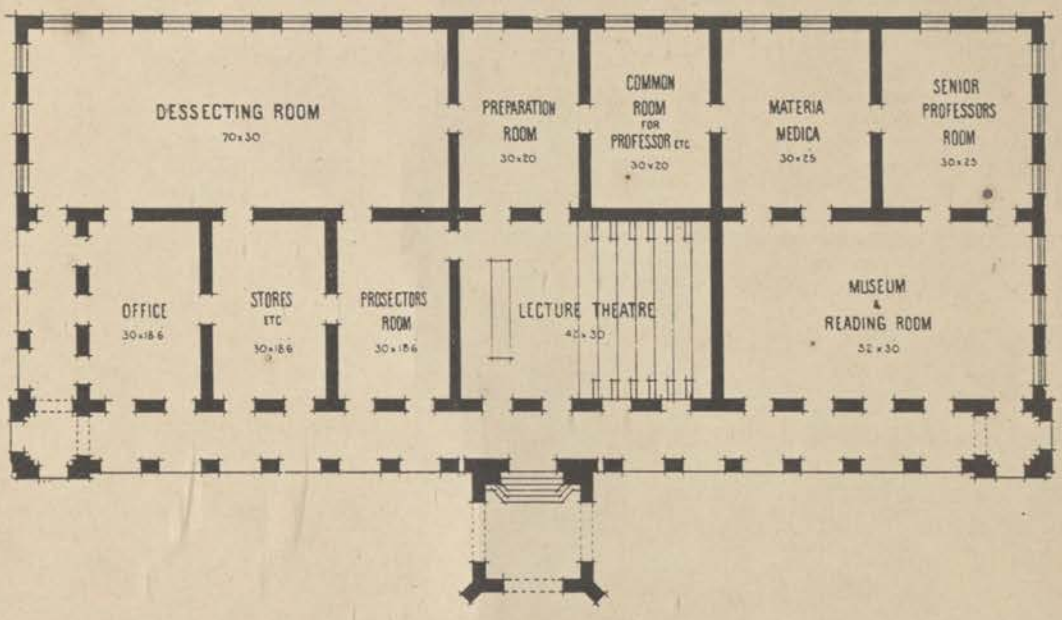


Henry Ramsey F.R.I.B.A.
C.E. Bengal 1911

DACCA UNIVERSITY
THE ANATOMICAL LABORATORY



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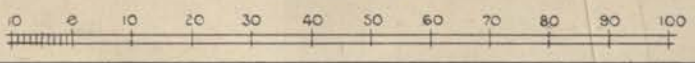
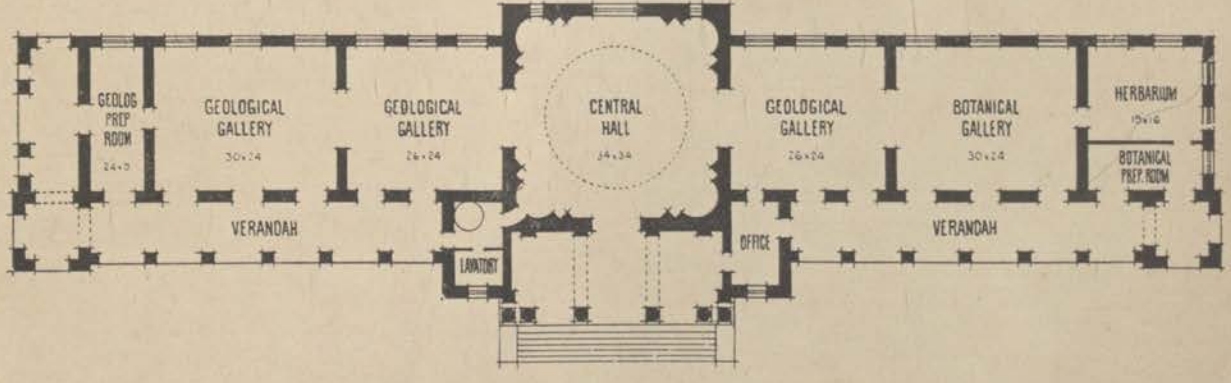


THE NATURAL HISTORY MUSEUM



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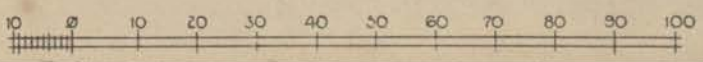
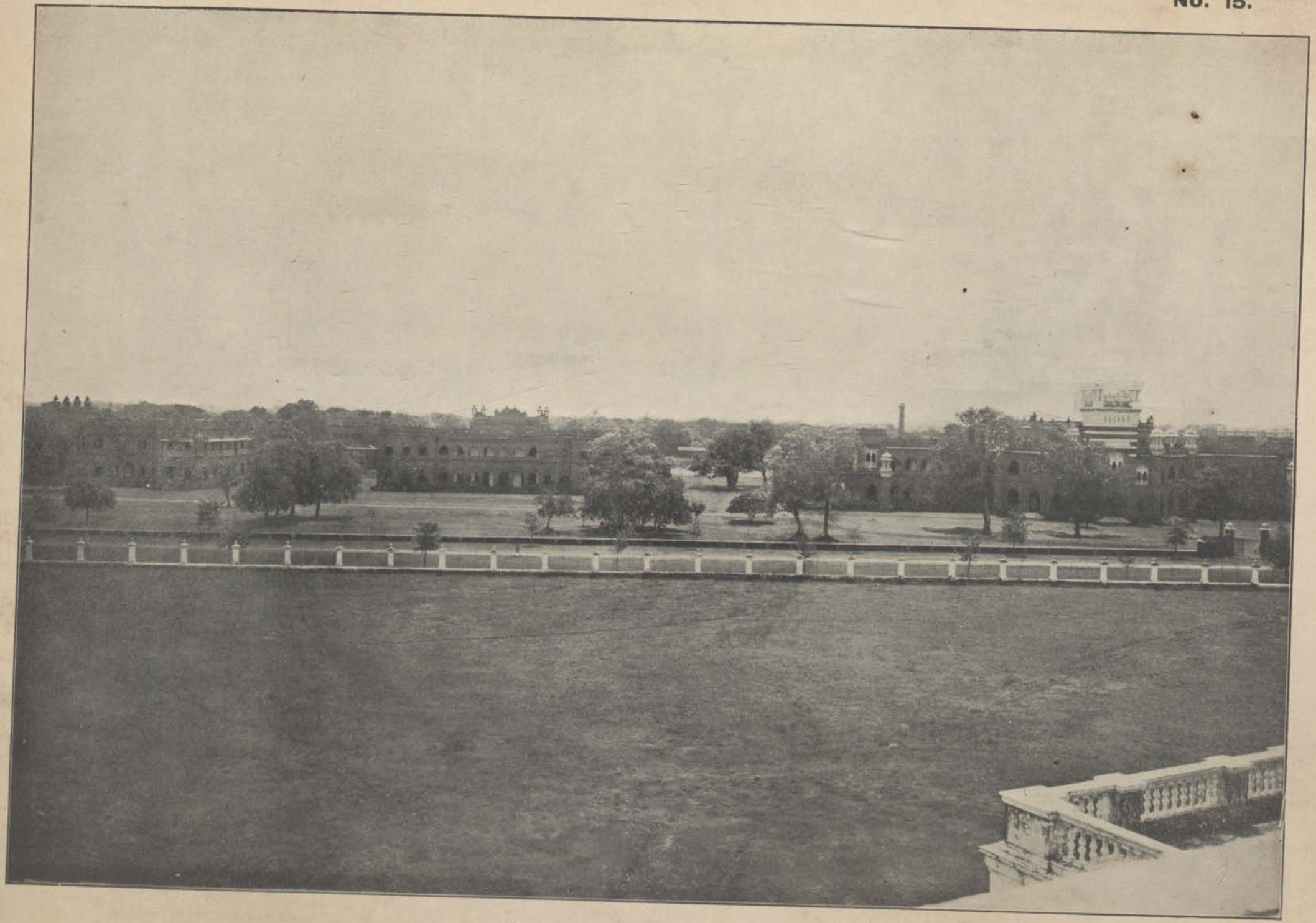
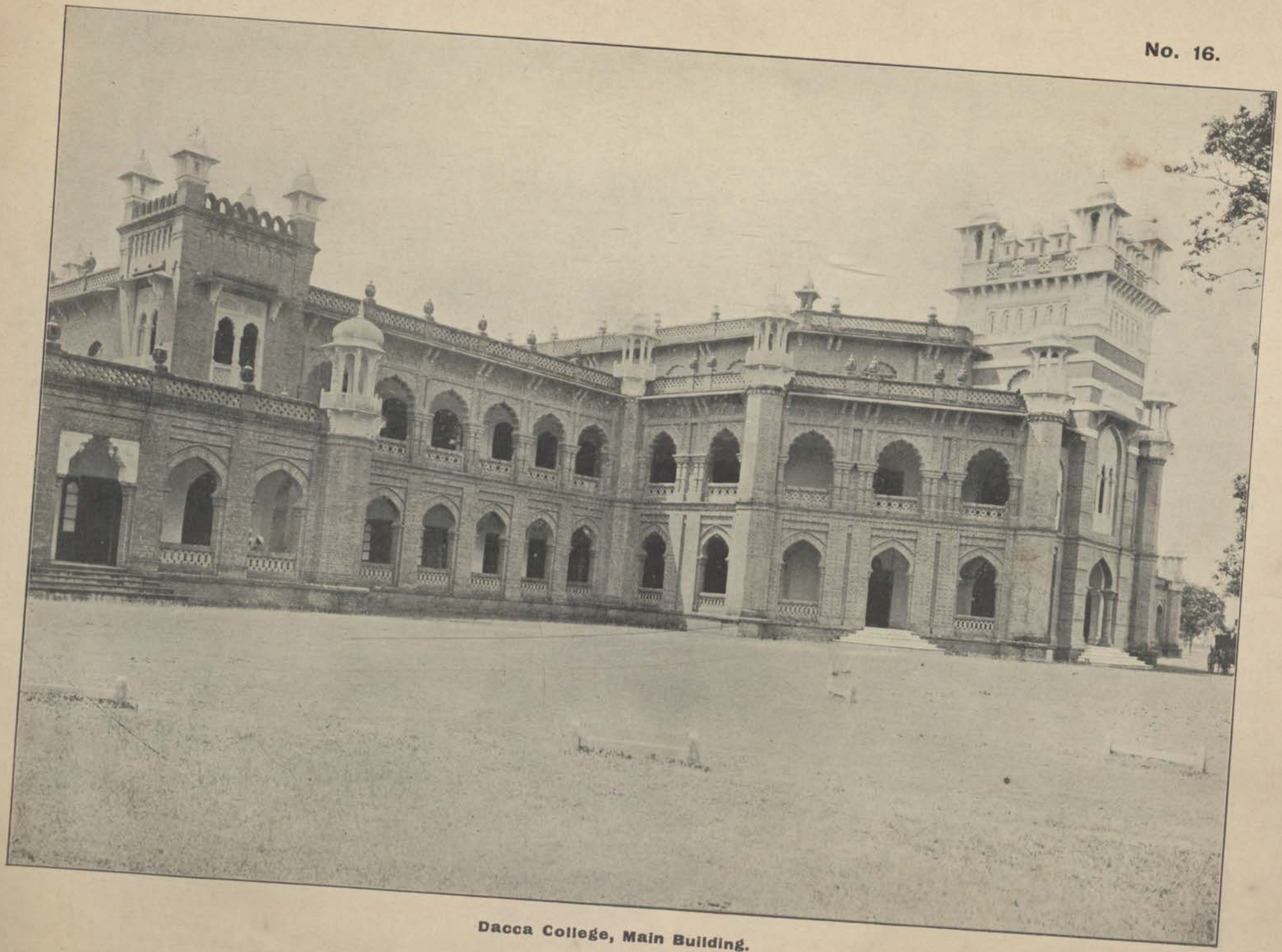
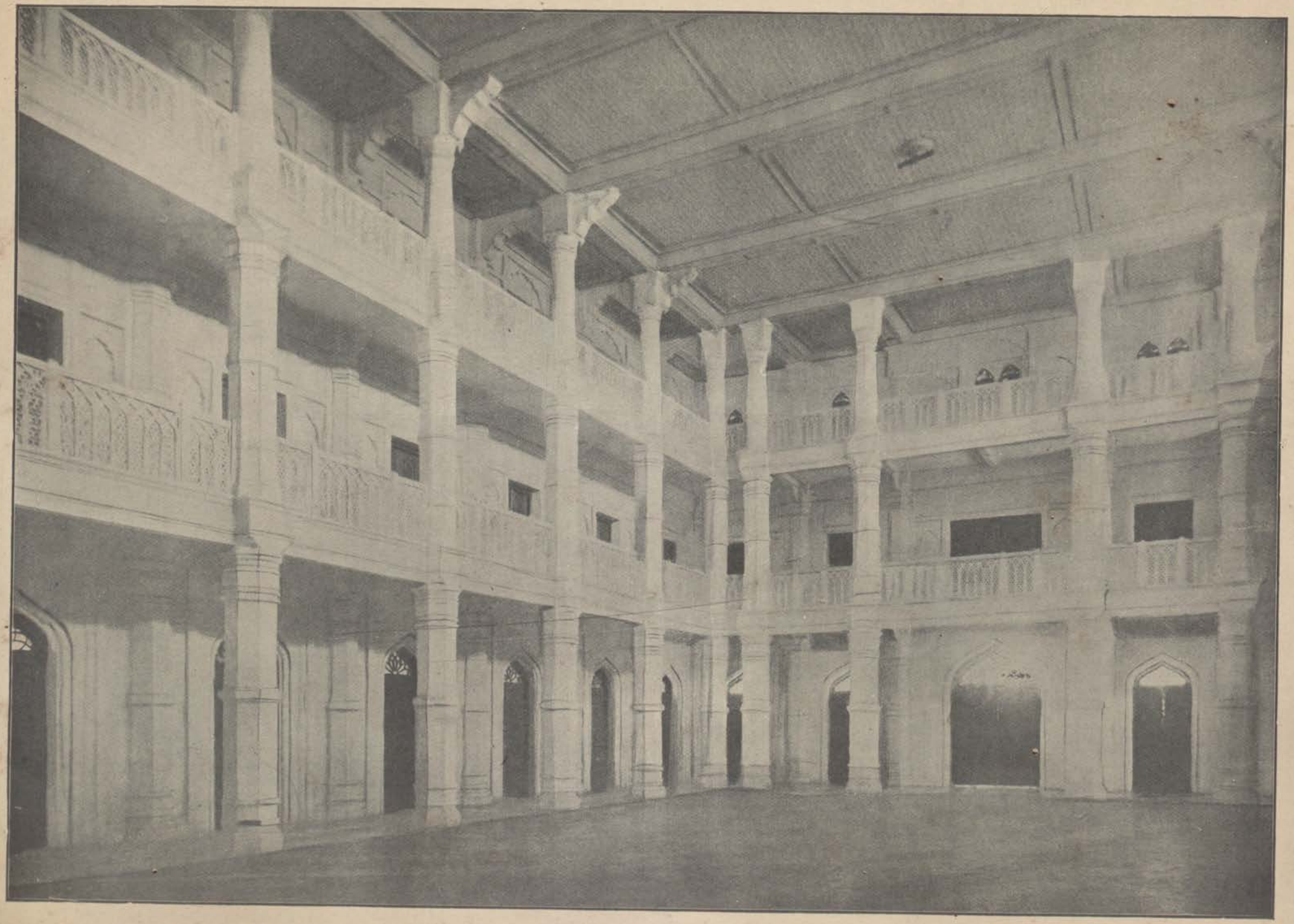




Dacca College, General View.



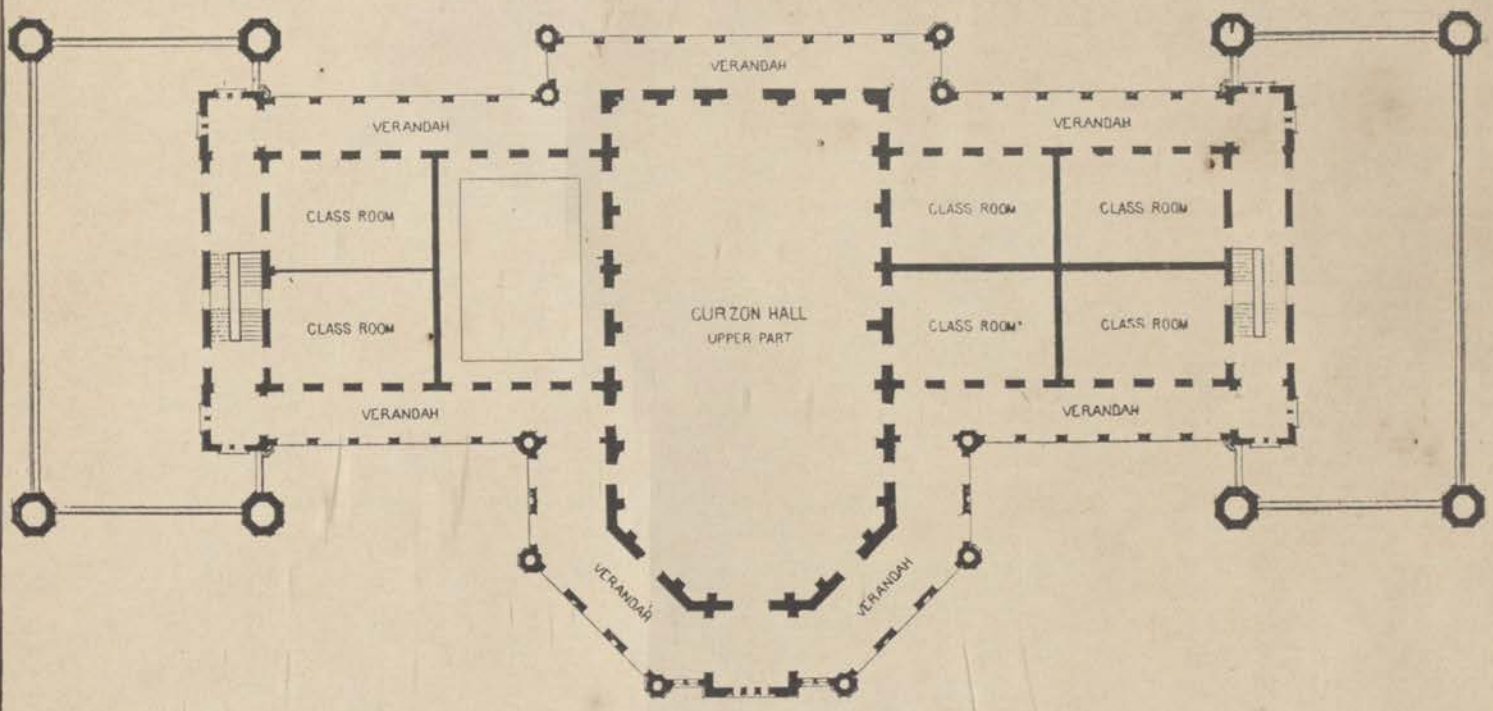
Dacca College, Main Building.



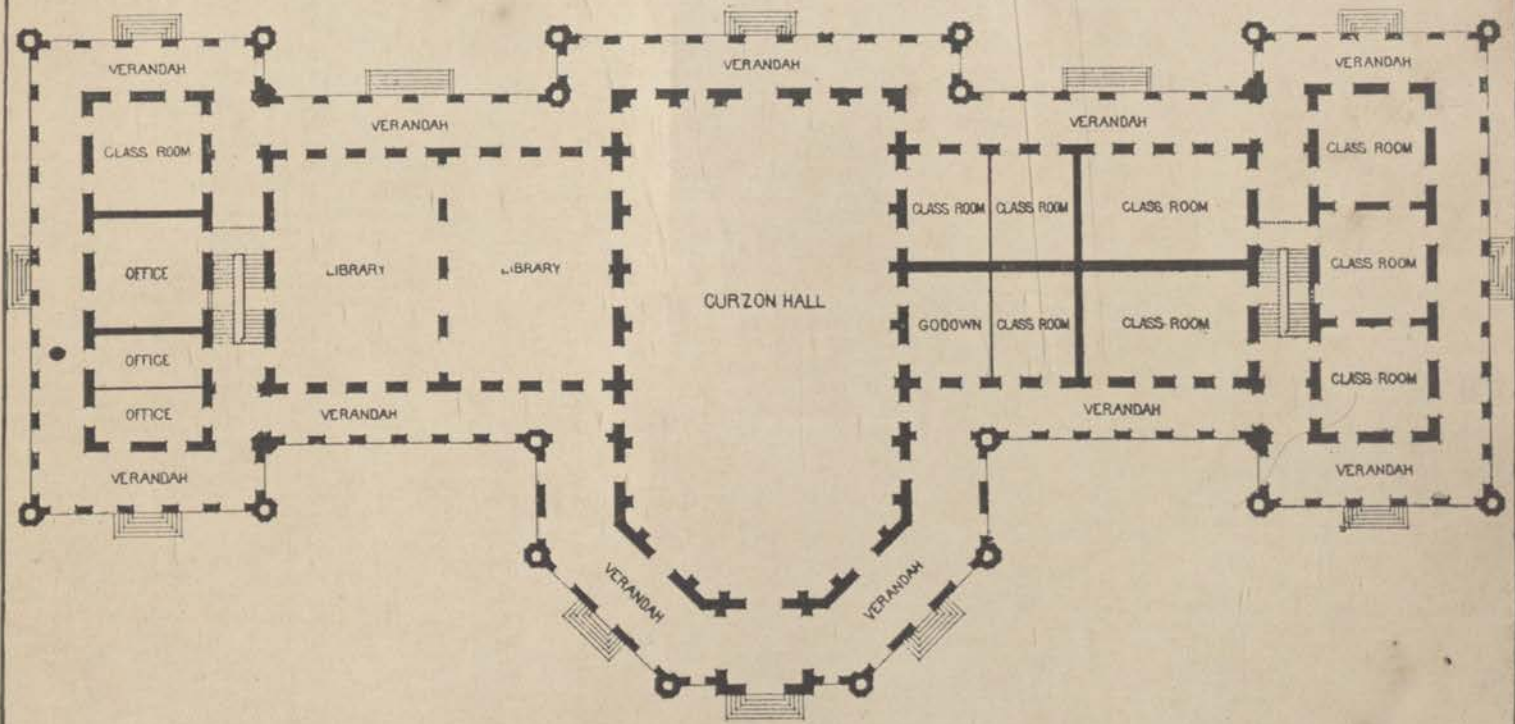
Dacca College, Interior of Curzon Hall.

DACCA COLLEGE
MAIN BUILDING

SCALE



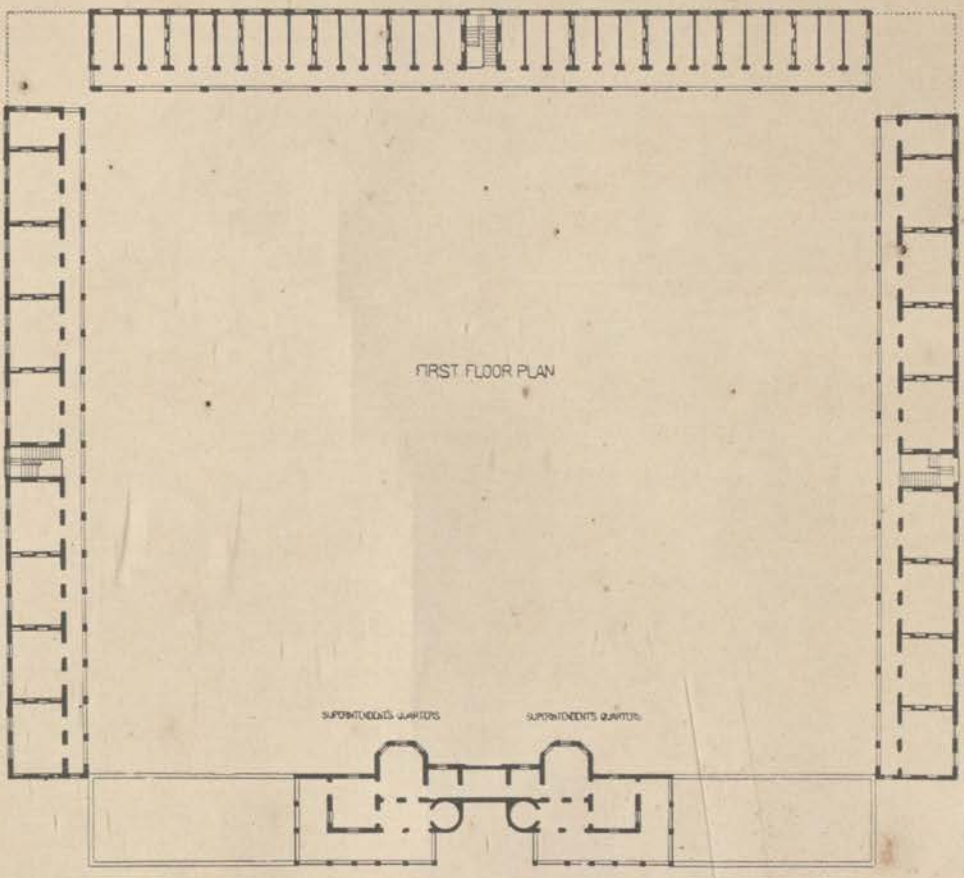
FIRST FLOOR PLAN

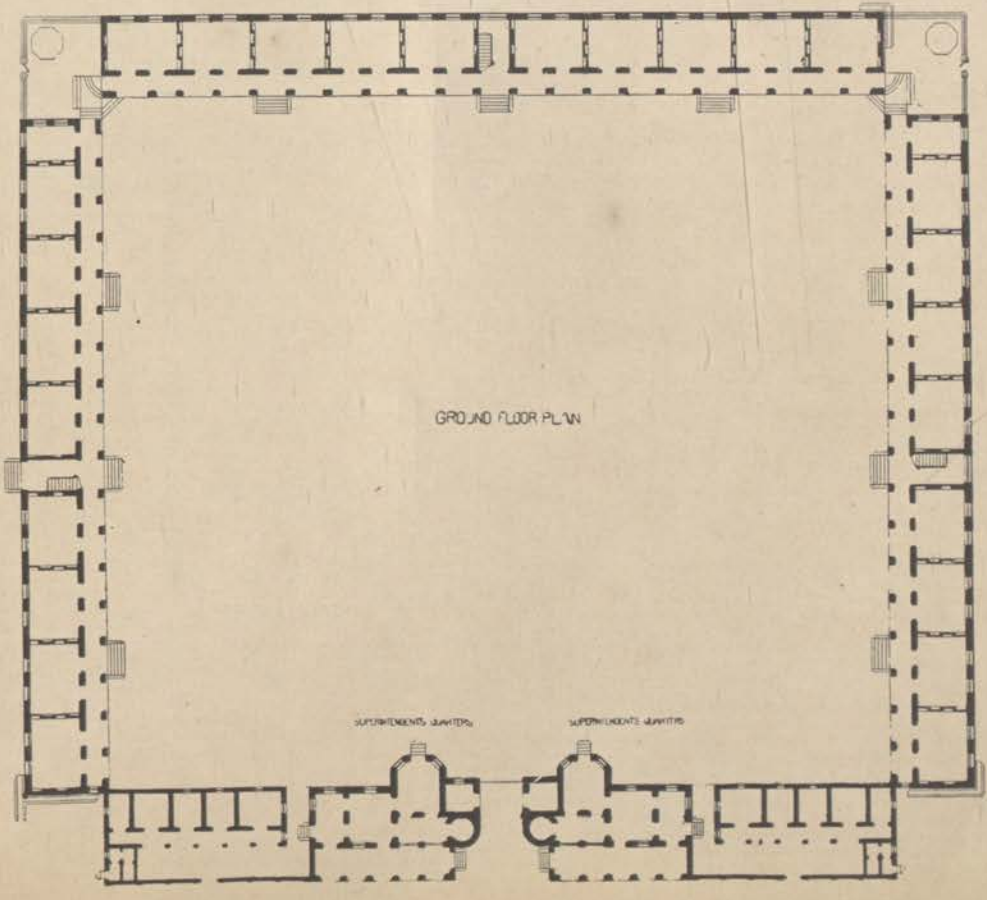


GROUND FLOOR PLAN

DACCA COLLEGE
FIRST HOSTEL

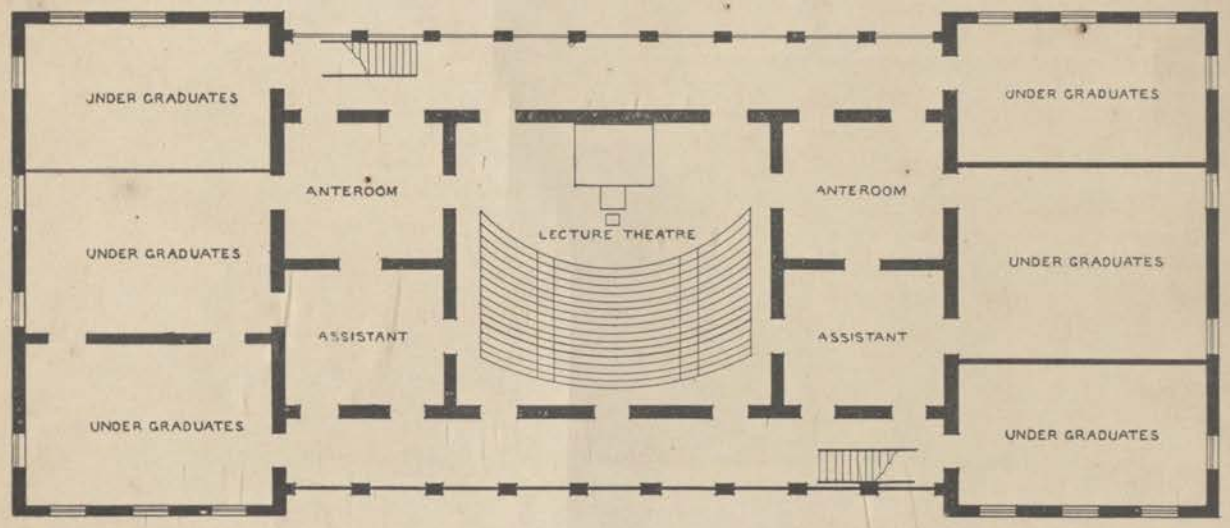
SCALE





DACCA COLLEGE

THIRD HOSTEL



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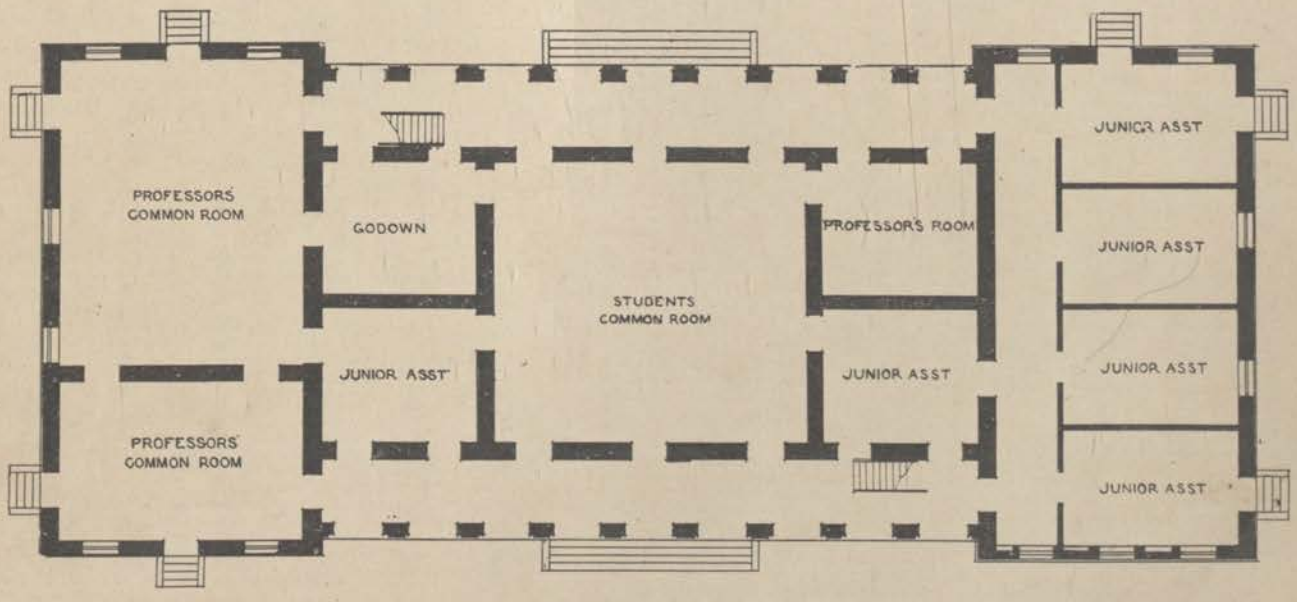

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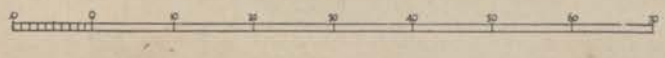
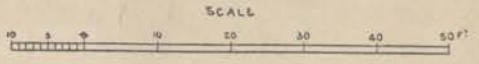
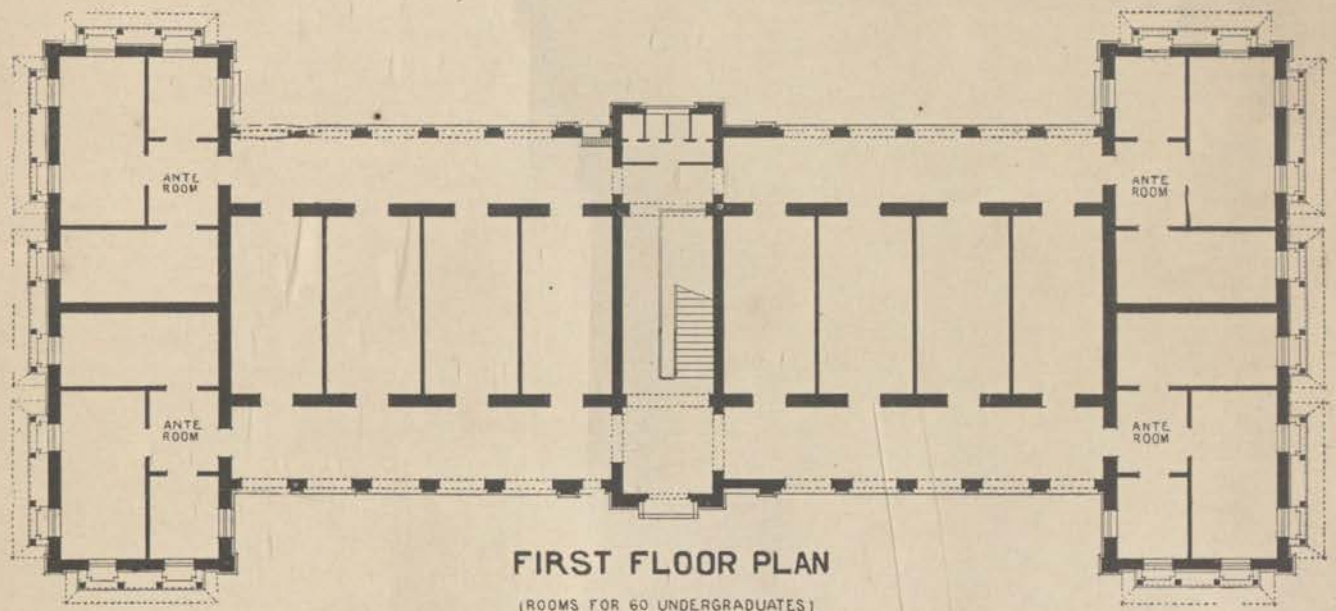


DACCA COLLEGE
FOURTH HOSTEL

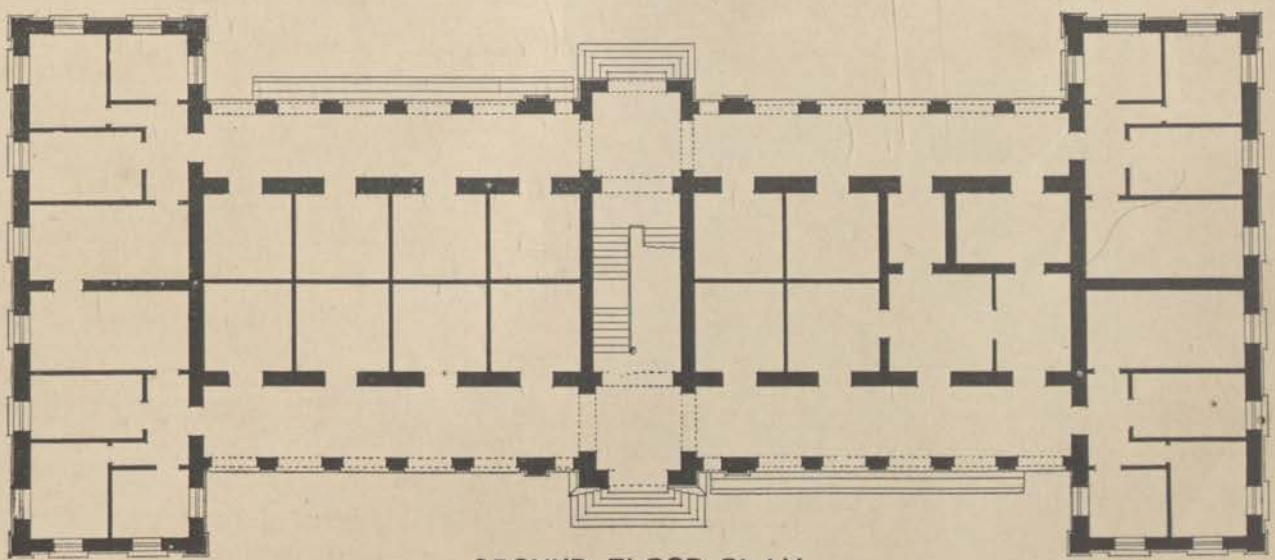
SCALE





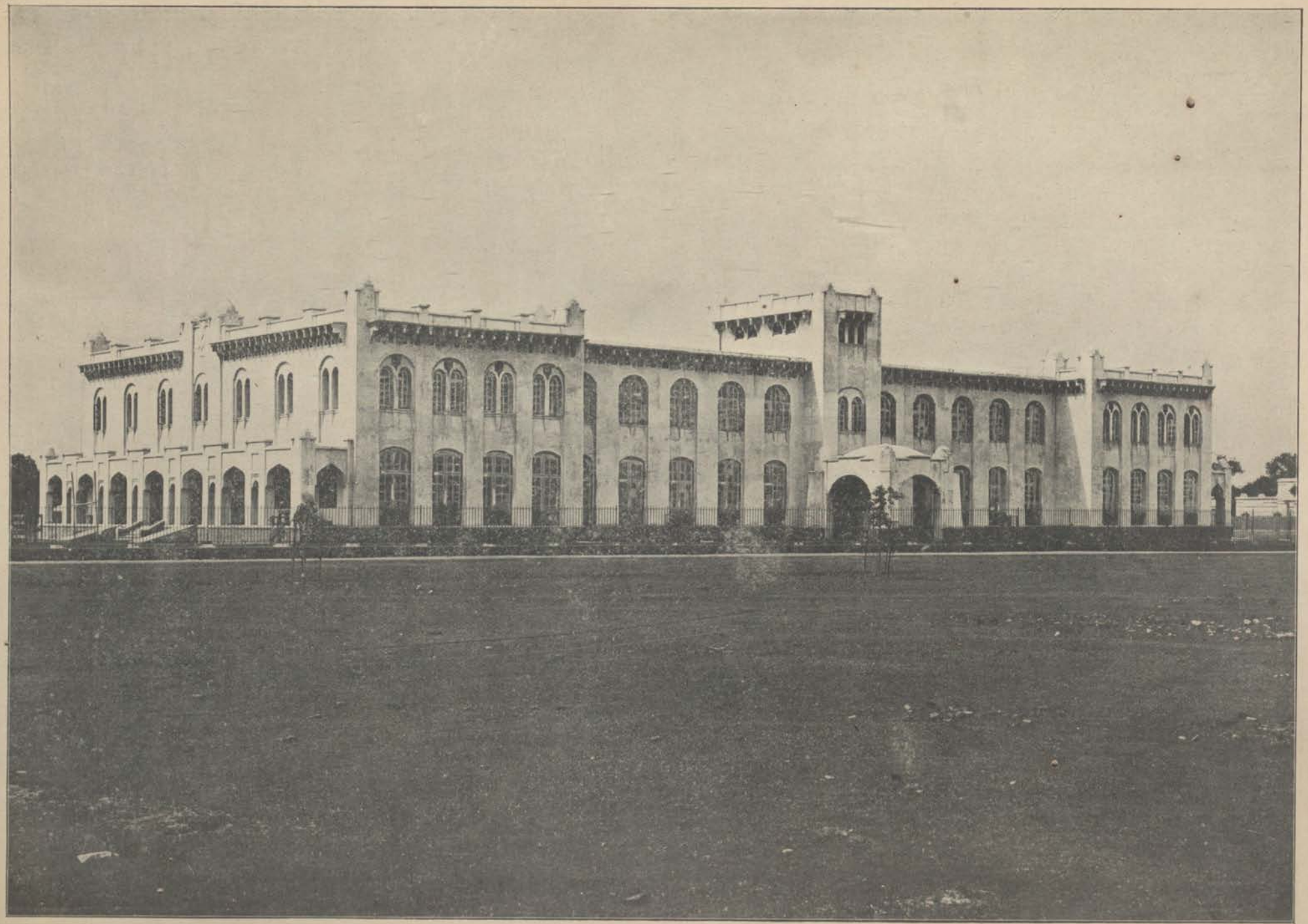
FIRST FLOOR PLAN

{ROOMS FOR 60 UNDERGRADUATES AND ONE JUNIOR ASSISTANT}

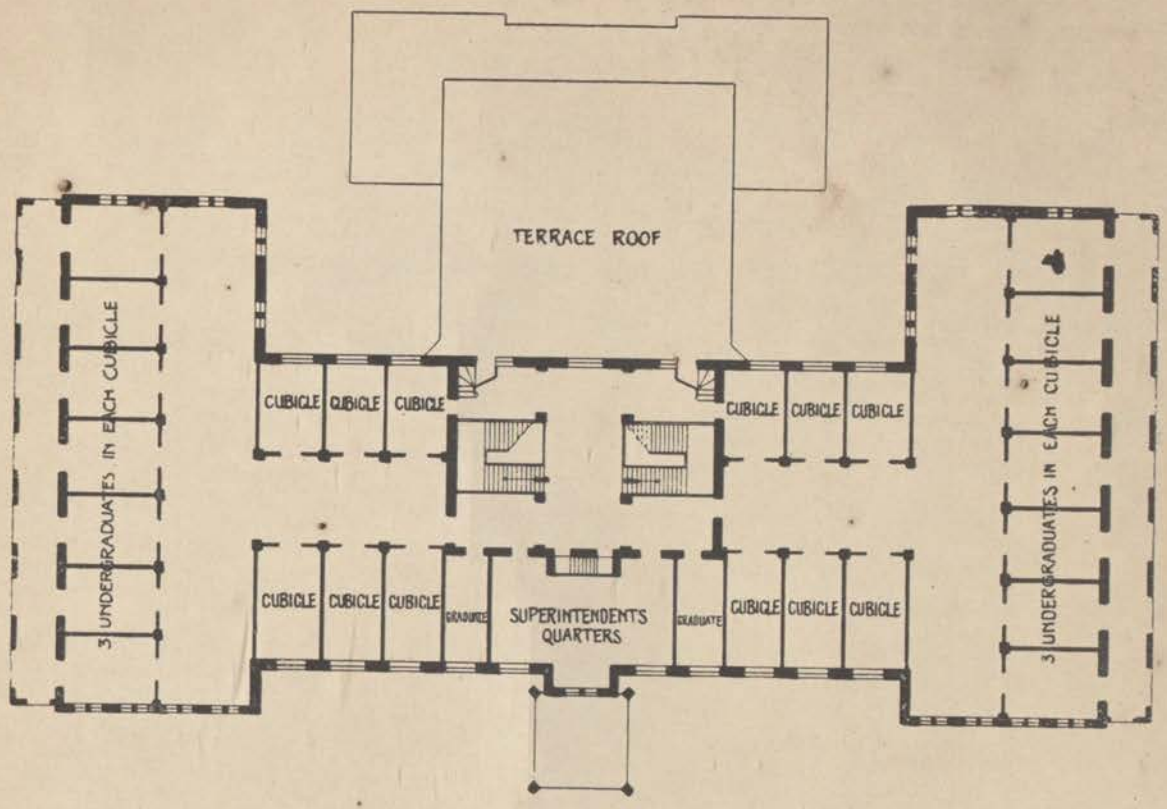


GROUND FLOOR PLAN

{ROOMS FOR 31 GRADUATES}



Jagannath College, Main Building.



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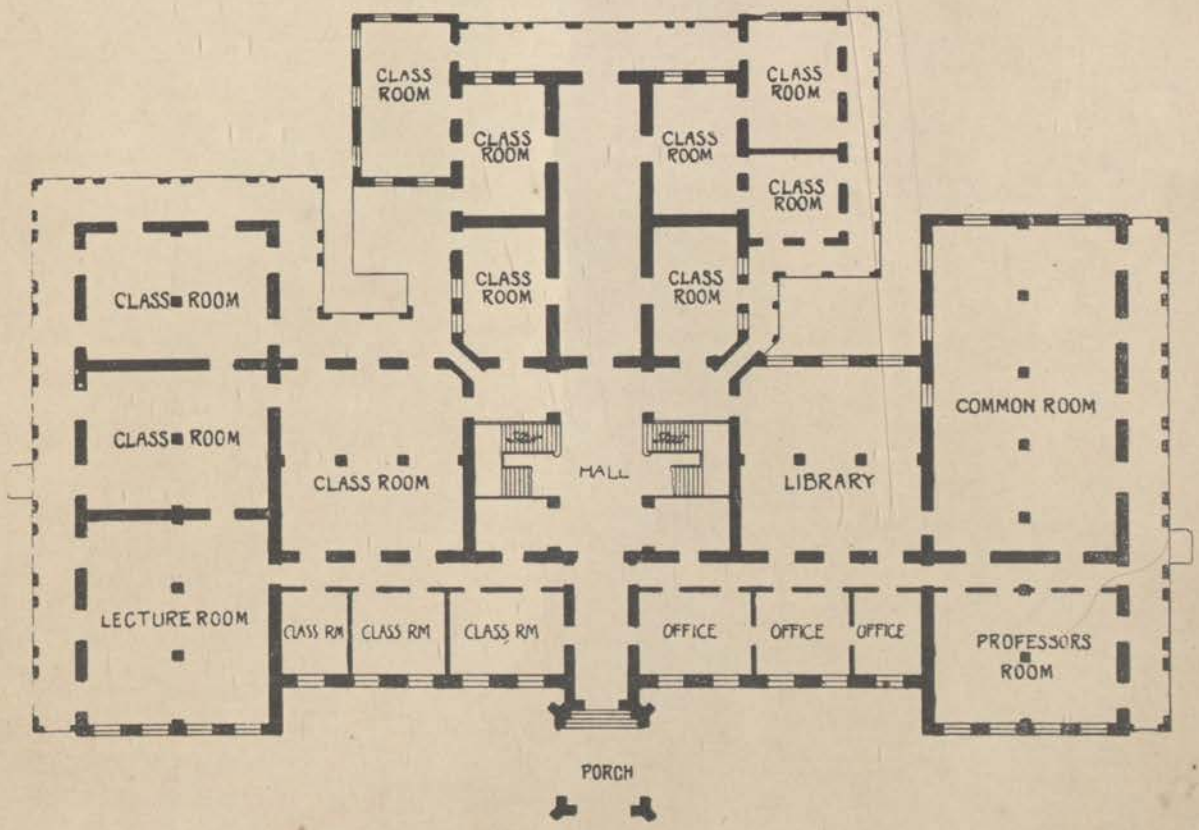
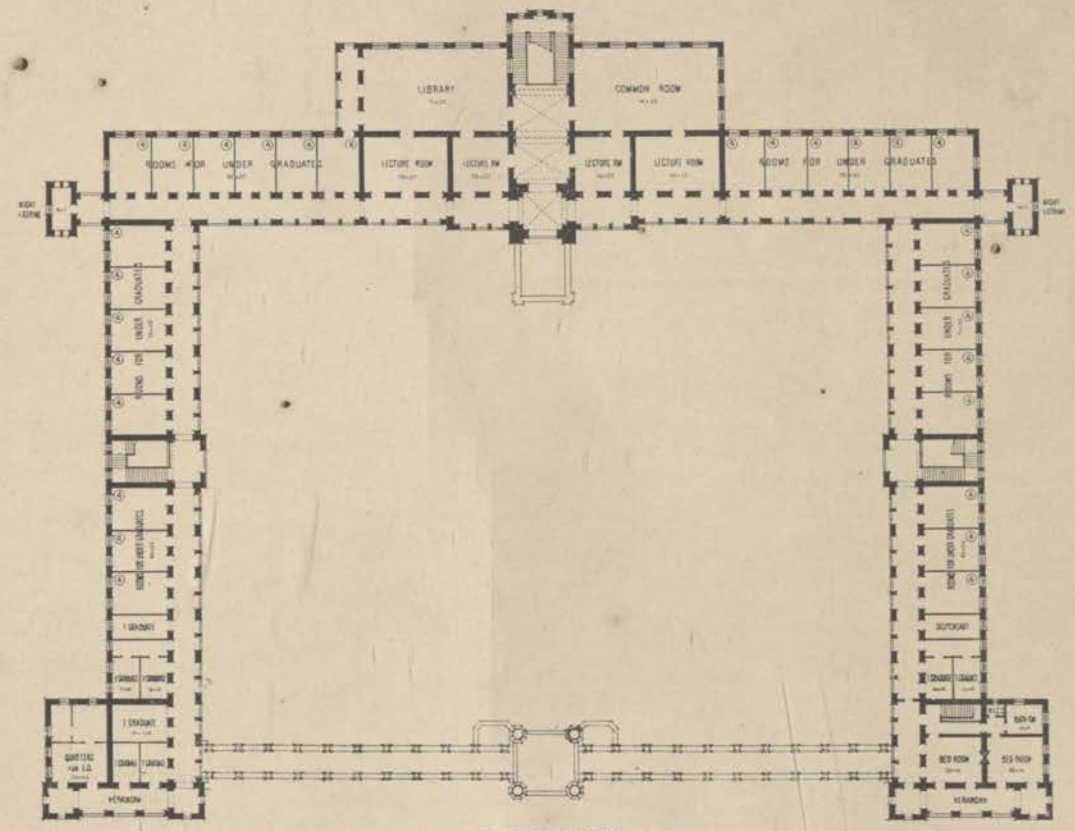


GROUND PLAN

Jagannath College, Plan.

THE MUHAMMADAN COLLEGE



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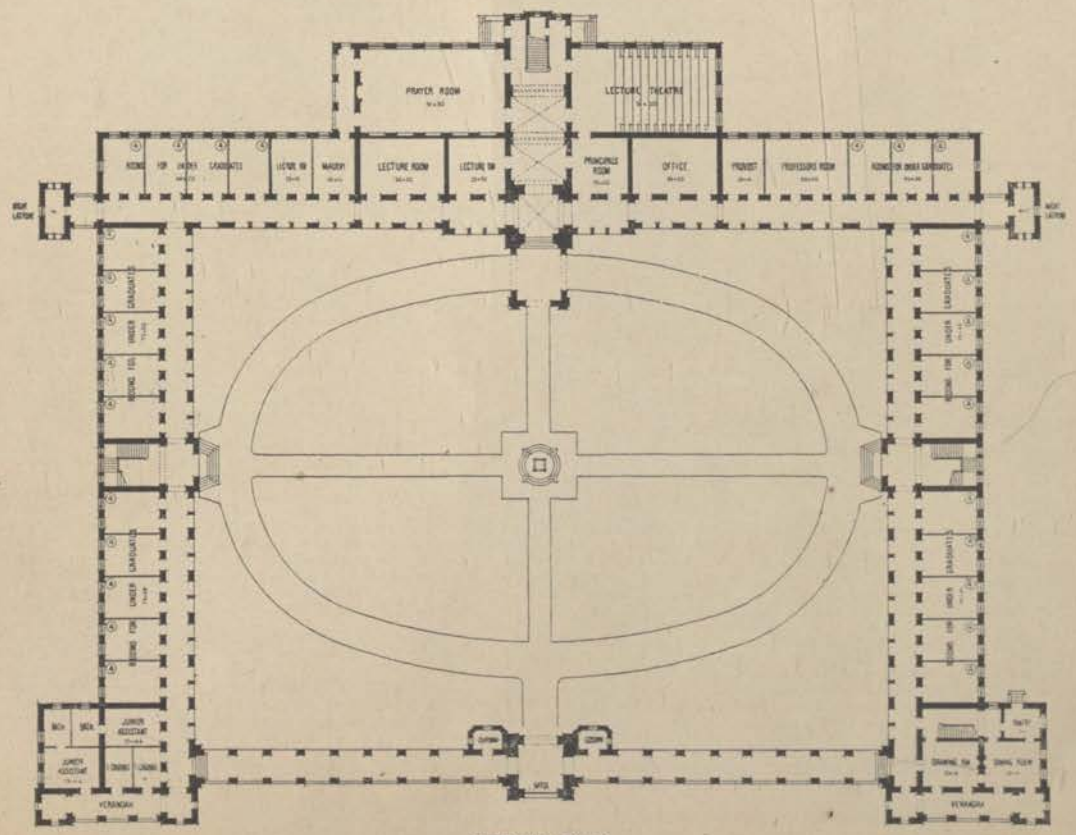
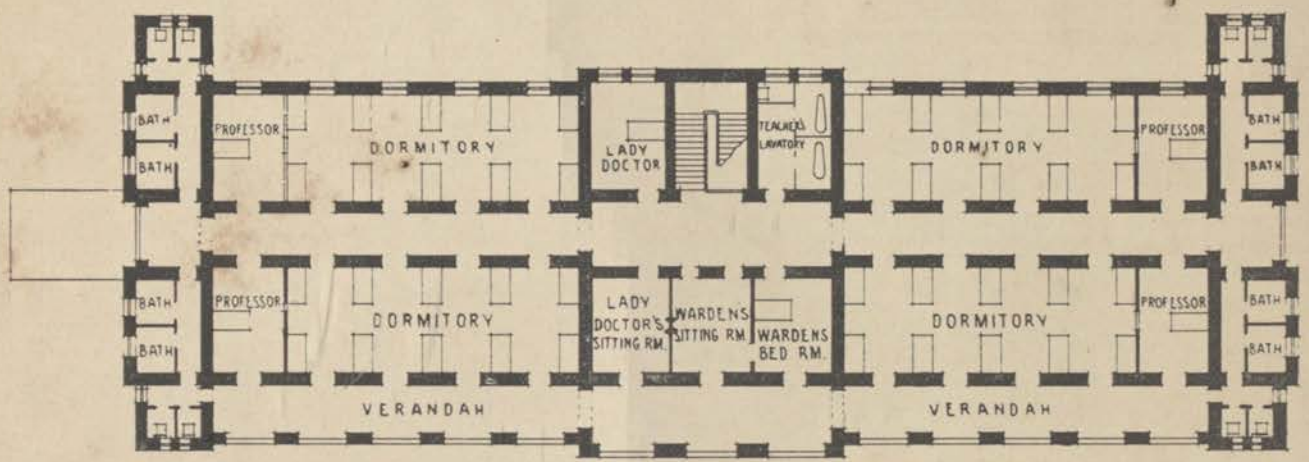


GROUND PLAN

Muhammadan College, Elevation.

THE COLLEGE FOR WOMEN



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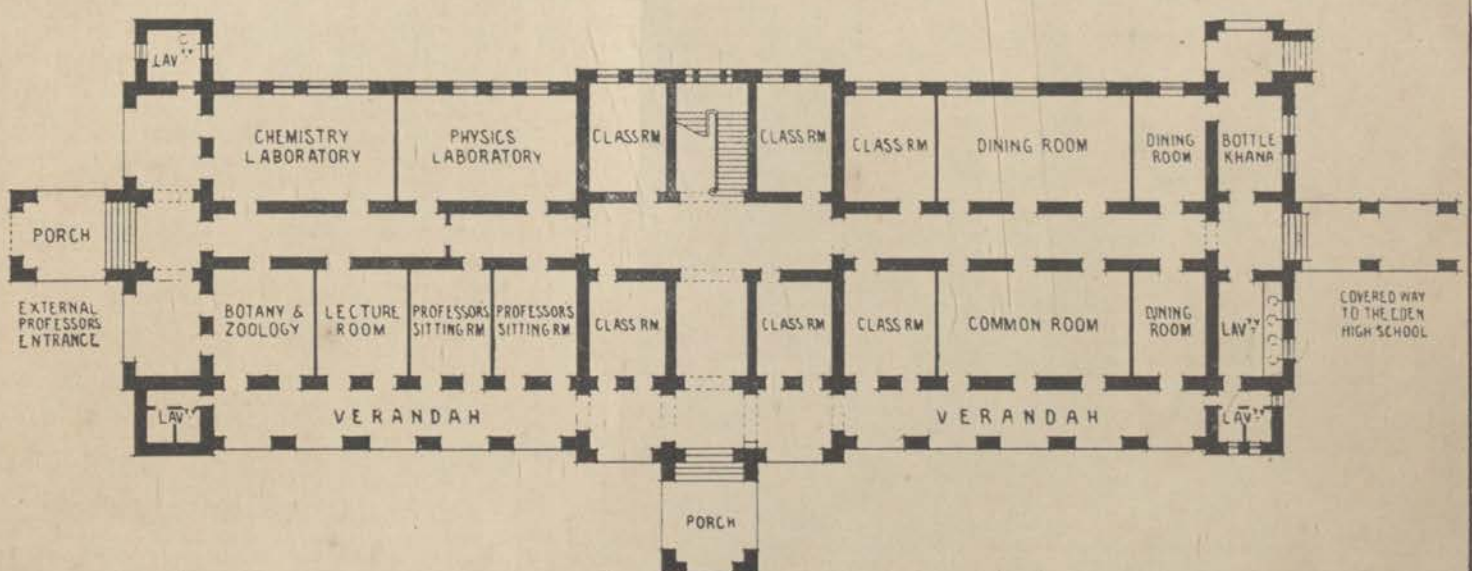
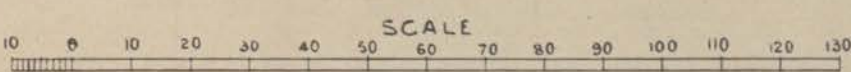
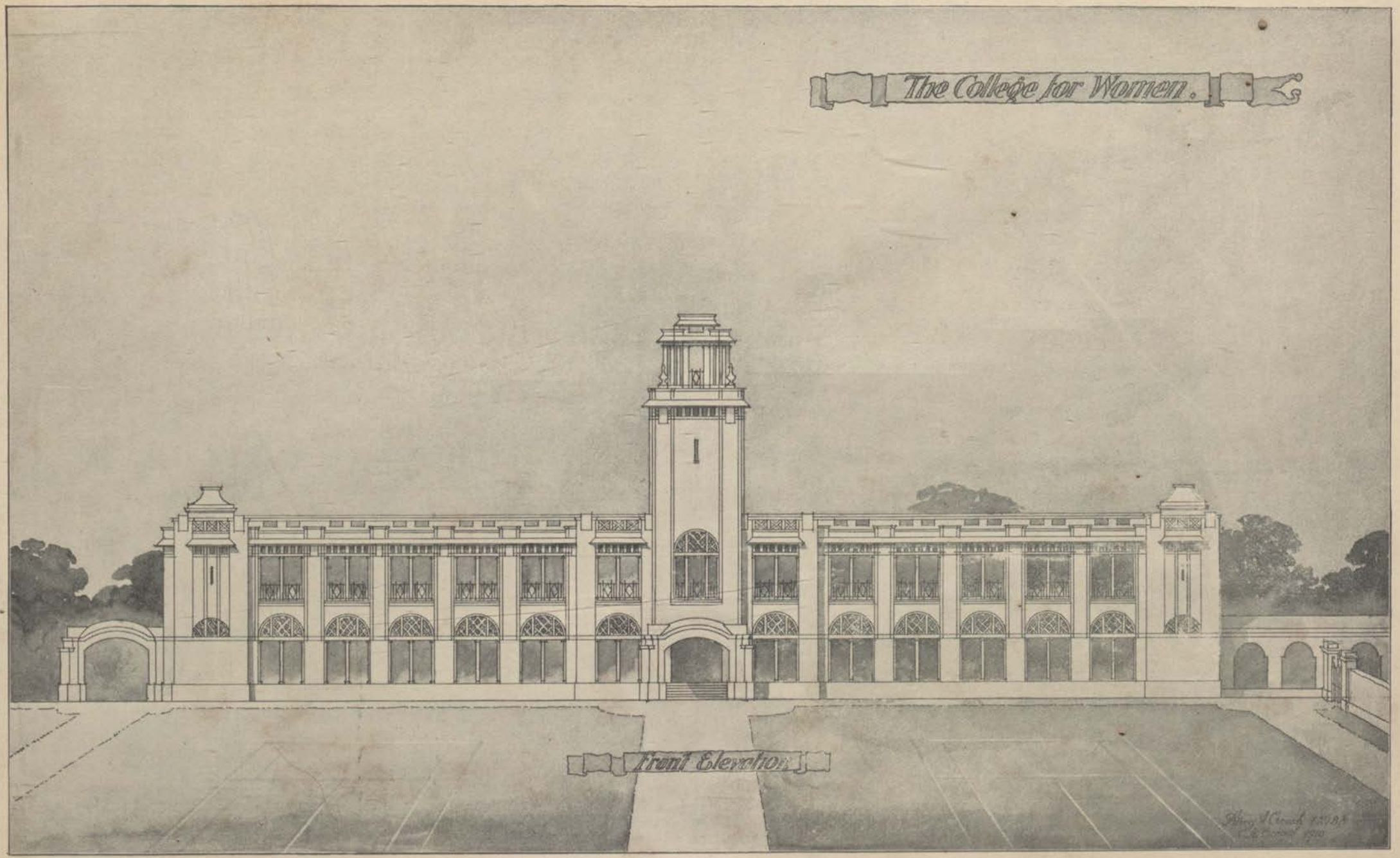


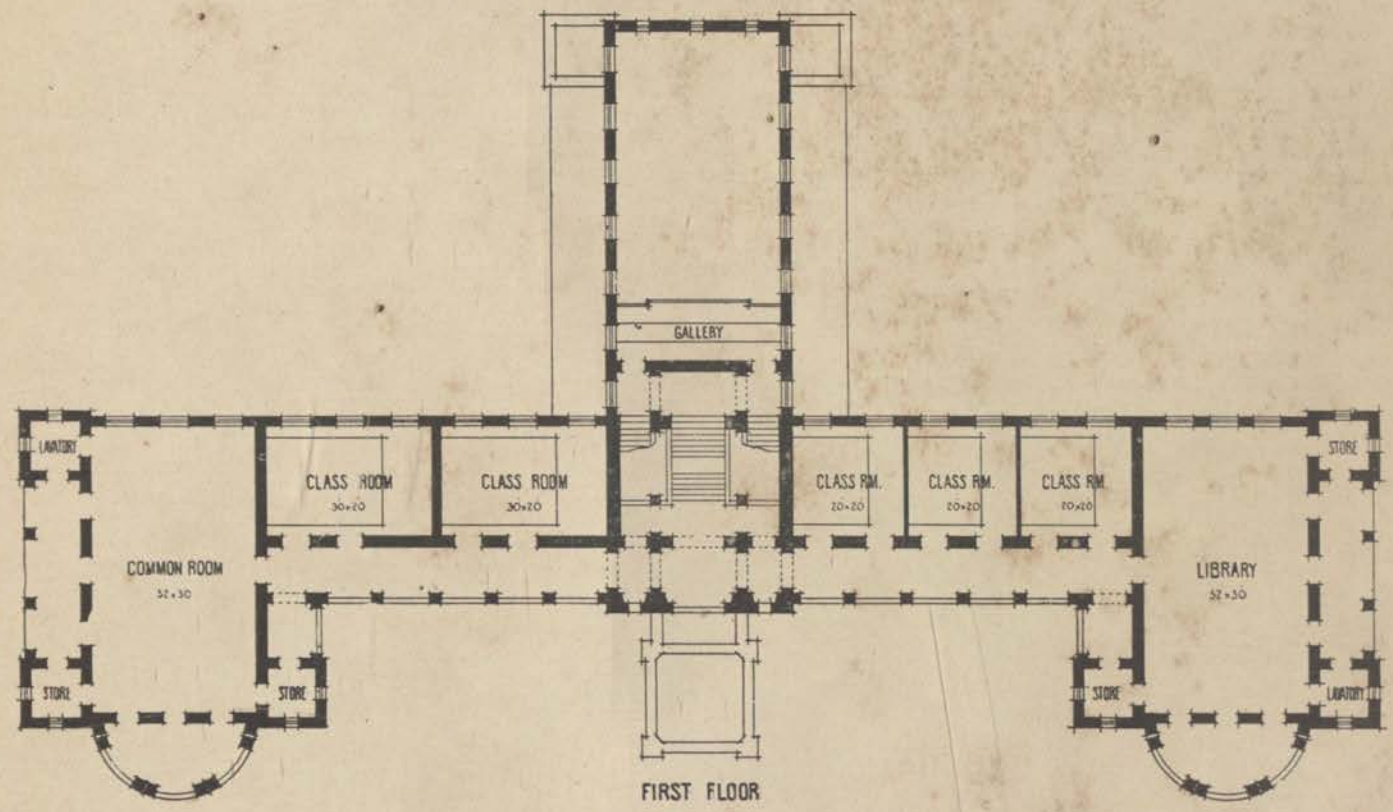
GROUND FLOOR PLAN





Women's College, Elevation.

THE COLLEGE FOR THE WELL-TO-DO CLASSES



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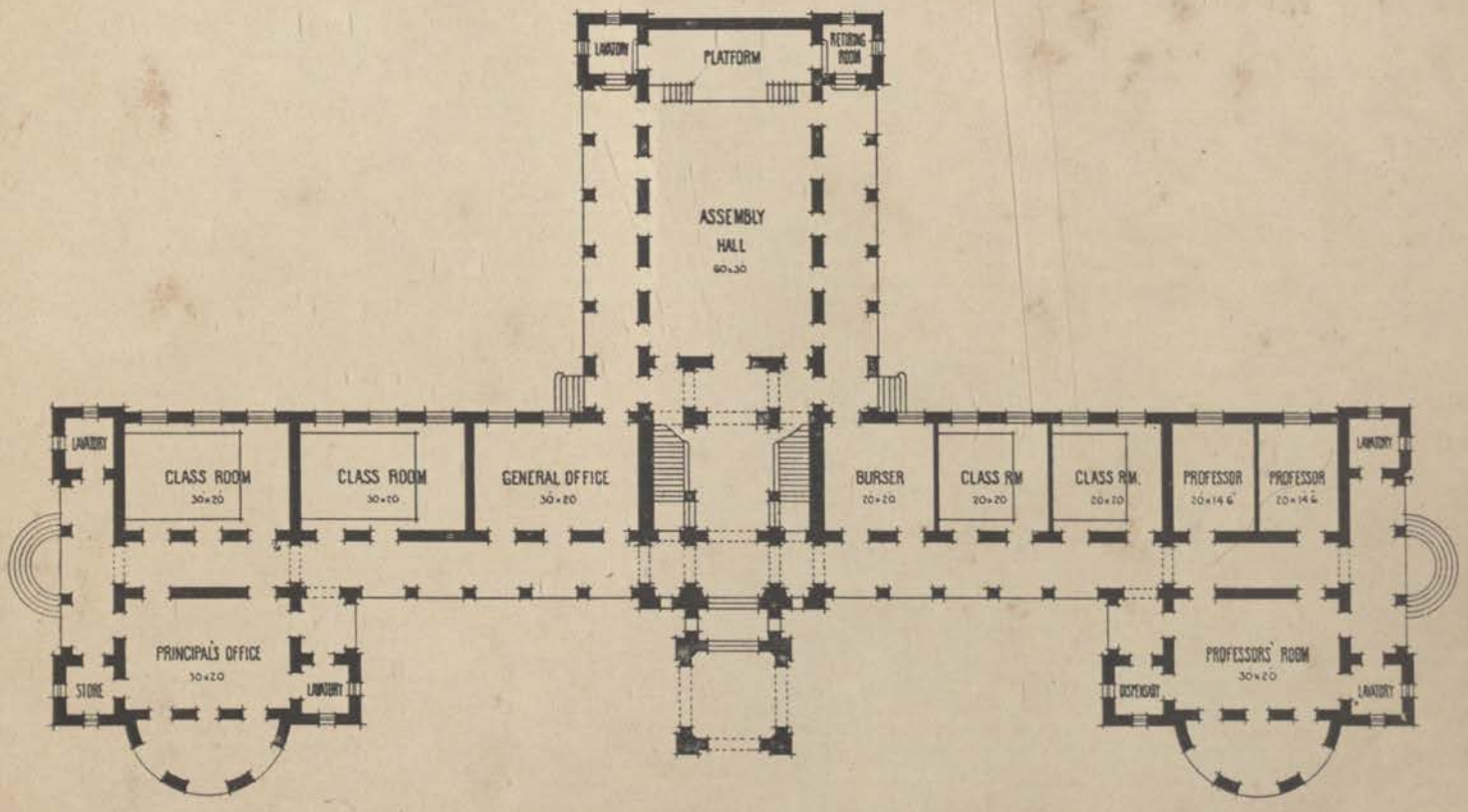
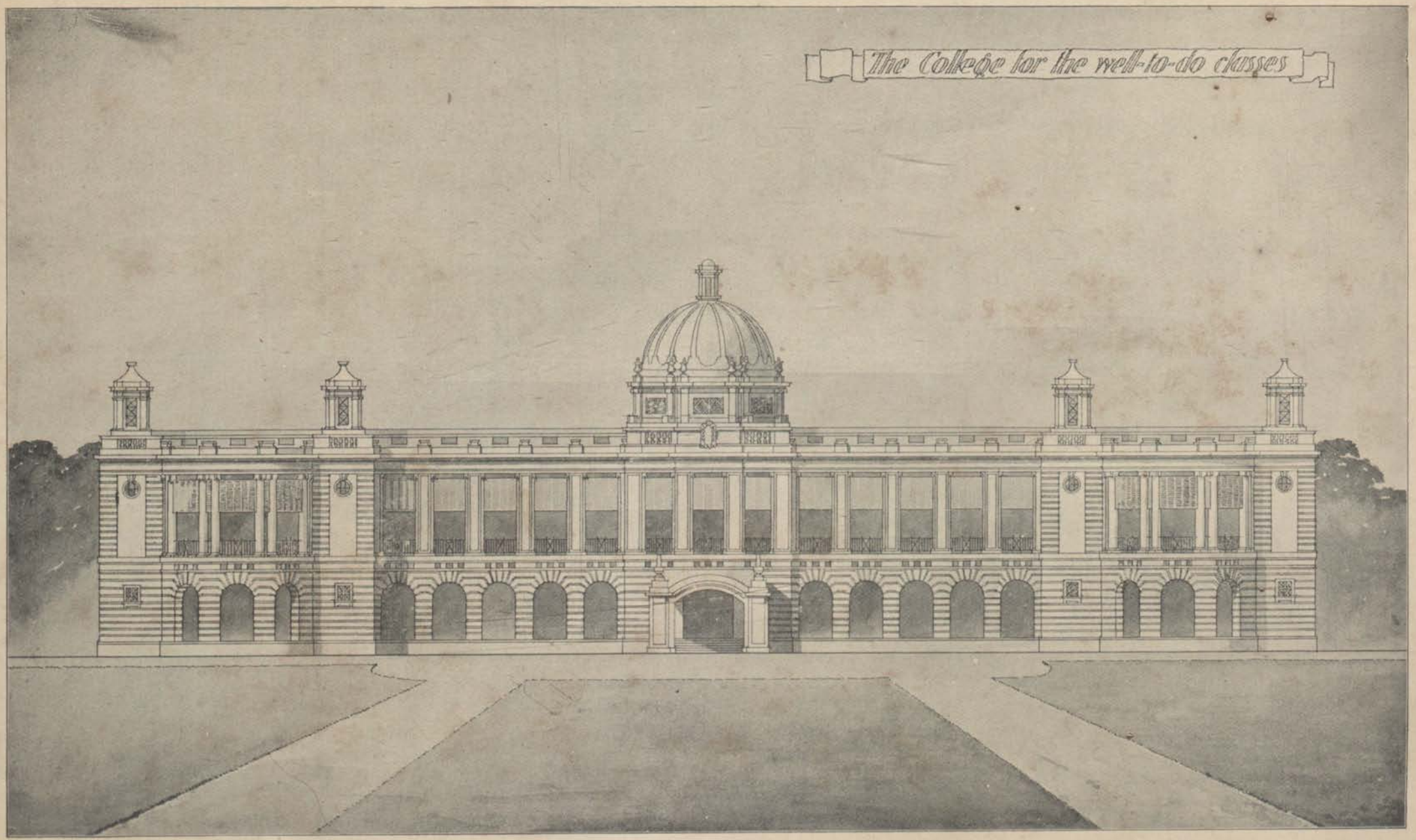


GROUND PLAN

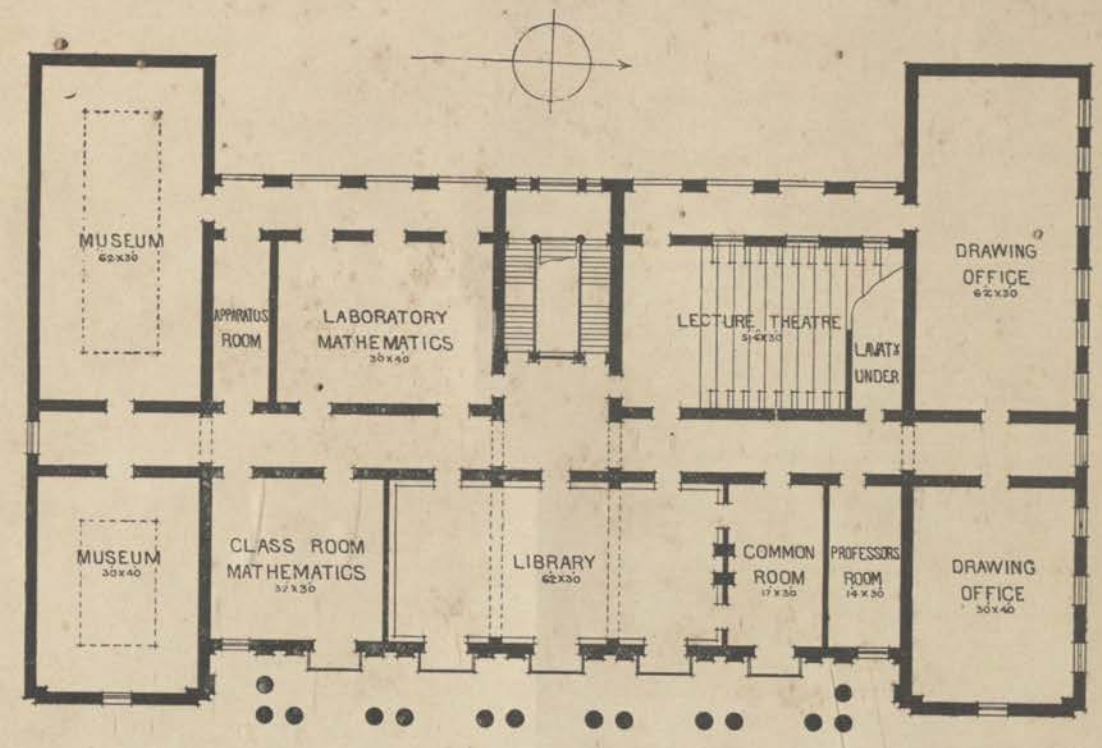
10 0 10 20 30 40 50 60 70 80 90 100

Henry F. Grunch 99 Gt
E. A. Burgess 1912



College for Well-to-do Classes, Elevation.

THE COLLEGE OF ENGINEERING



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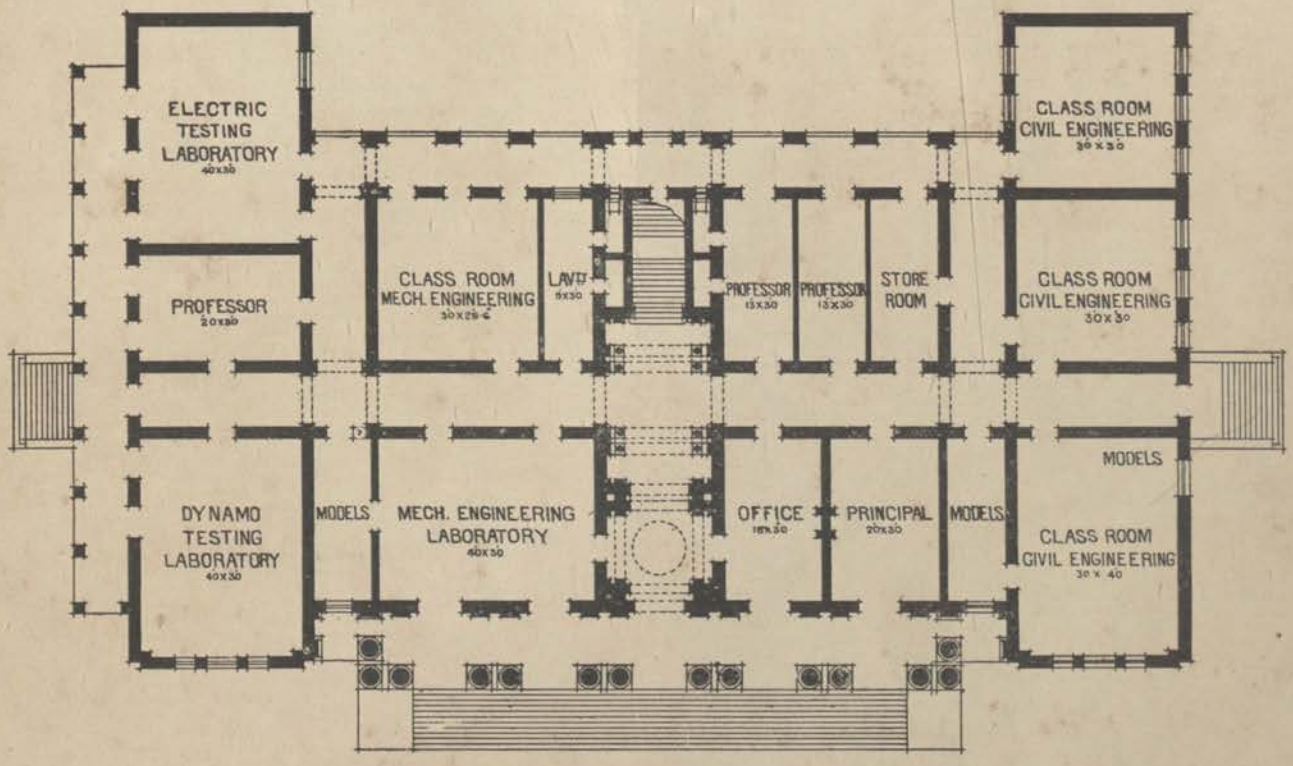
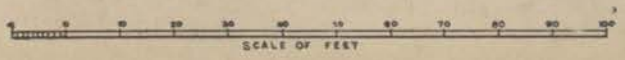
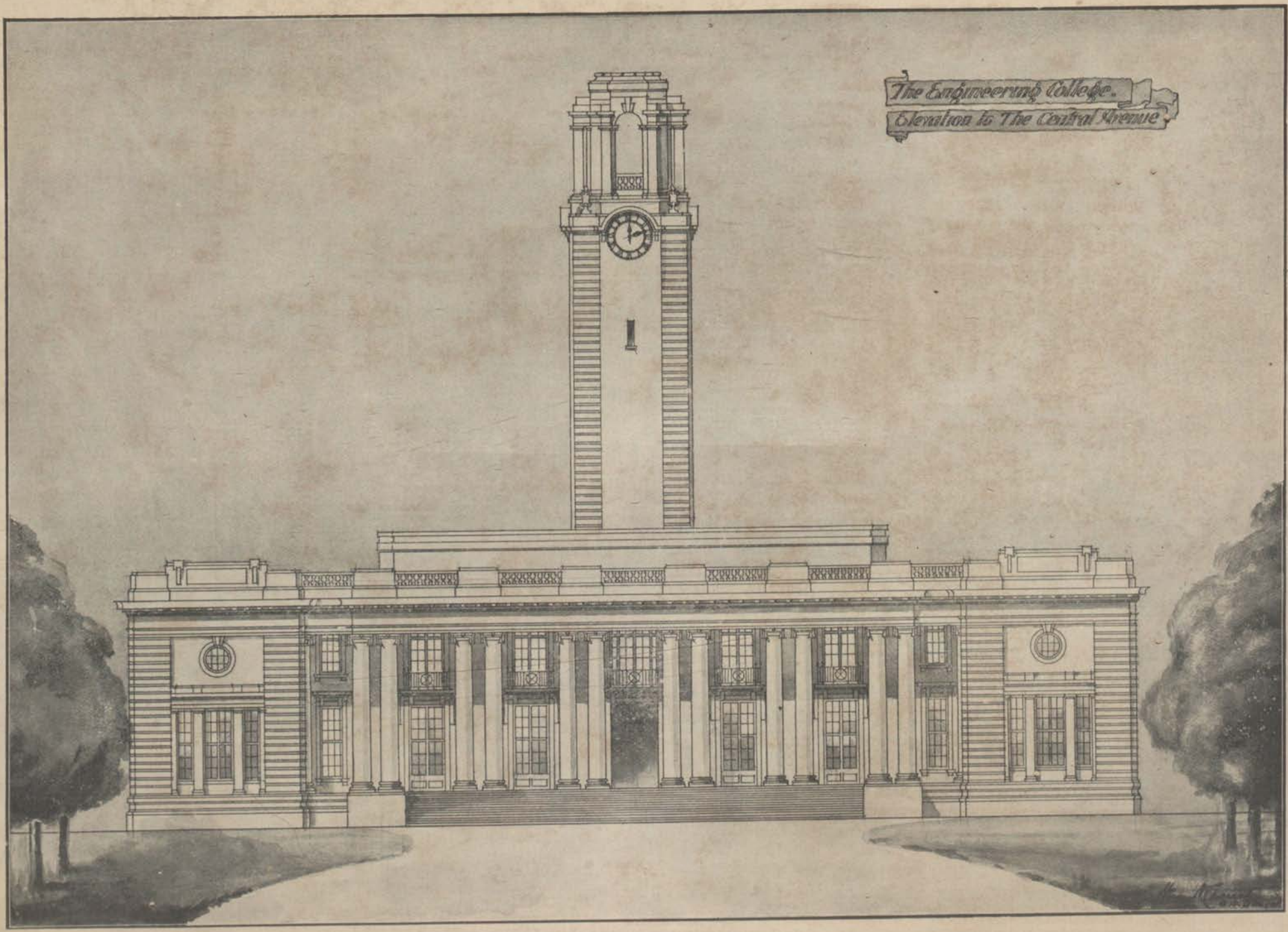


GROUND PLAN

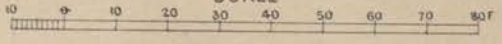


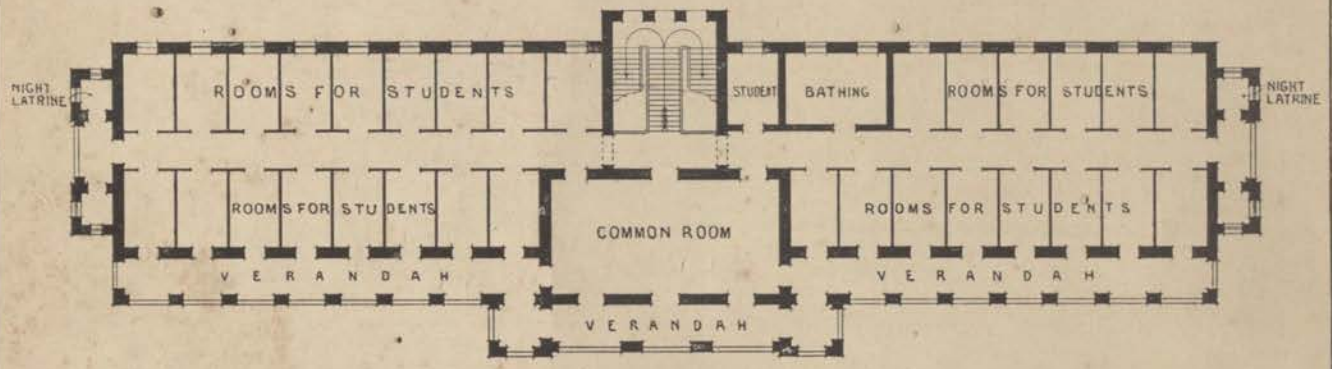


College of Engineering, Elevation.

COLLEGE OF ENGINEERING
HINDU - HOSTEL

SCALE





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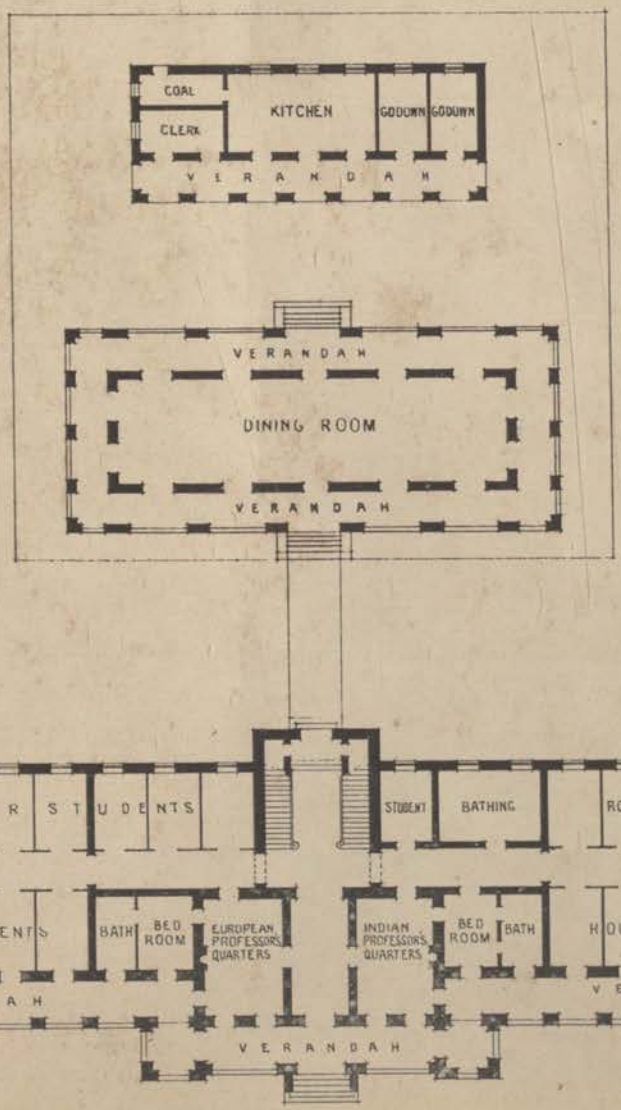
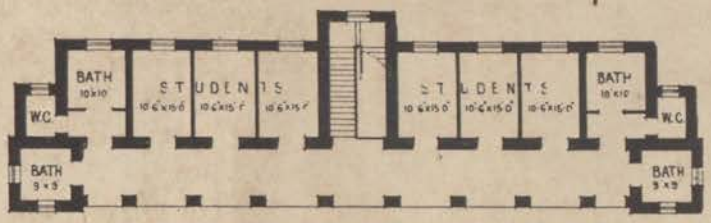


GROUND FLOOR PLAN

COLLEGE OF ENGINEERING
EUROPEAN HOSTEL



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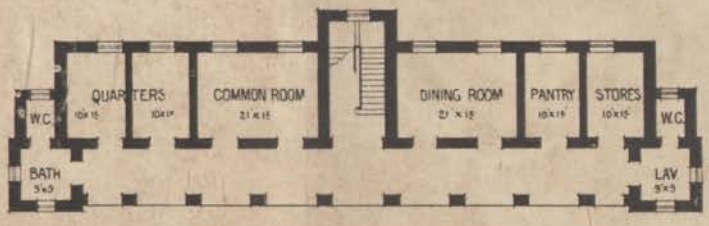
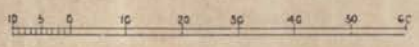


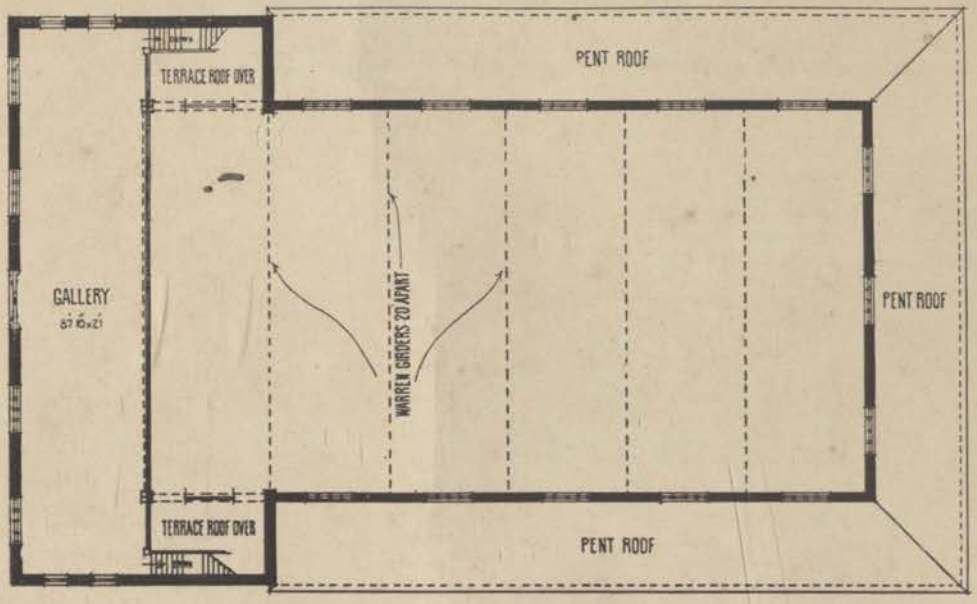
GROUND FLOOR



COLLEGE OF ENGINEERING
DEMONSTRATION HALL ETC

GROUND PLAN

DACCA UNIVERSITY
PLANS OF THE GYMNASIUM



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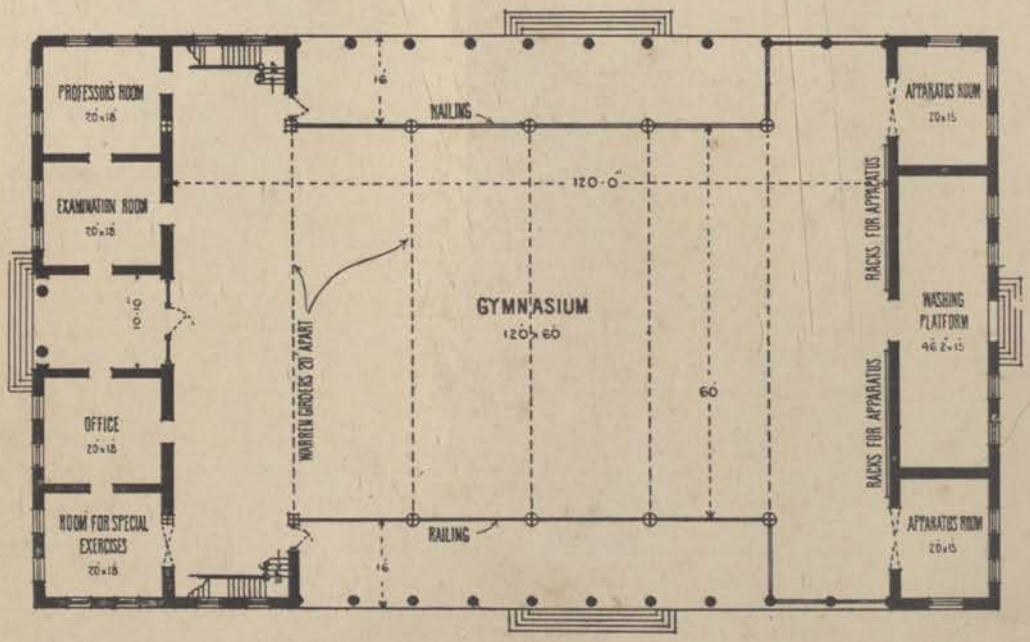
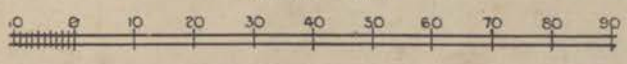
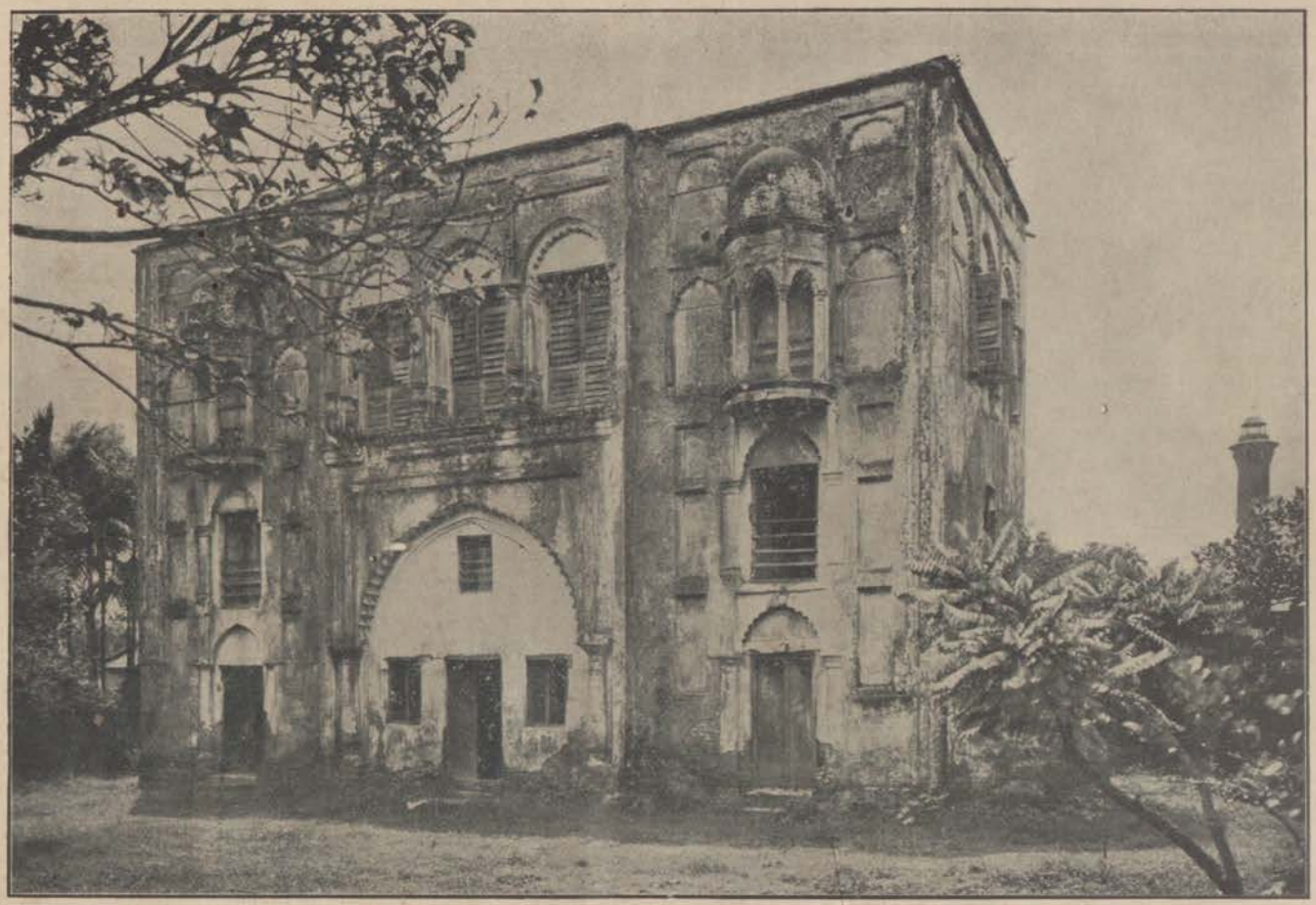


GROUND PLAN





Gateway of Old Palace (Part of Historical Museum).

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